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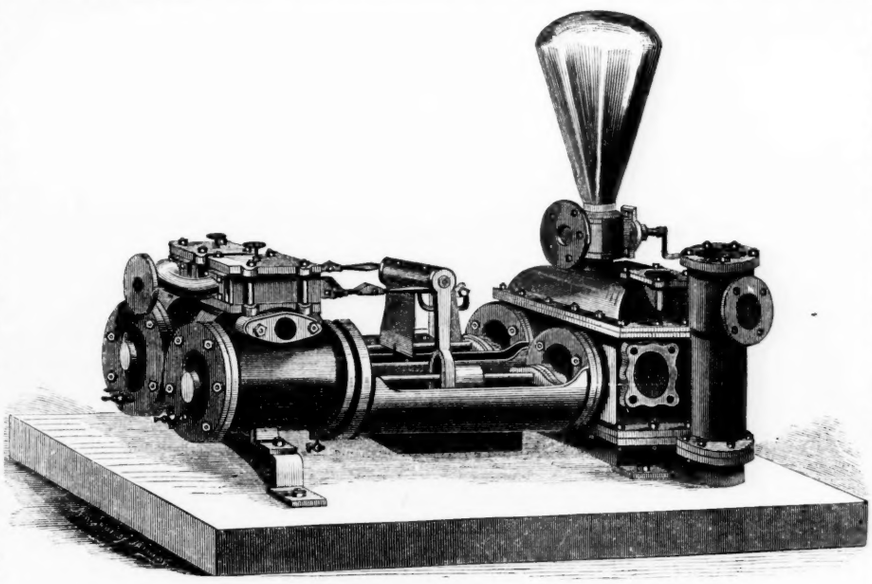
STEAM PUMPS.

Pursuing our series we come to H. R. Worthington's Duplex Steam Pump, which is manufactured at the Hydraulic Works Manufactory, Van Brunt street, near Hamilton avenue, Brooklyn, although the business office is at 61 Beekman street in this city. We have engraved an excellent representation of this pump, which will enable those engaged in mining, and who need such a machine, to understand its merits more easily. The valve motion is the prominent and important peculiarity of this pump, being that to which it owes its exemption from noise or concussive action. Two steam pumps are placed side by side, and so combined as to act reciprocally upon the steam valves of each other. The one piston gives steam to the other, after which it finishes its own stroke, and waits for its valve to be acted upon before it can renew its motion. This pause allows all the water valves to seat quietly, and removes everything like harshness of motion As one or the other of the steam valves must be always open, there can be no centre or dead point. The pump is therefore always ready to start when steam is admitted, and is managed by the simple opening and shutting of a valve. An application of the principle to independent air pumps for marine engines is in successful operation on a number of steamers. It supersedes the ordinary air pump attached to the main engines, and where surface condensers are used, is combined with circulating pumps. We are informed that a modification of the arrangement has proved to be well adapted to air pressure pumps for oil wells. Blowing engines for cupolas and blast furnaces are made on the same principle. Economy of fuel is one of its chief recommendations, and hence, in sparsely timbered mining districts, it must prove valuable.



WORTHINGTON'S DUPLEX STEAM PUMP.

Belgian Coal Mines.

We gather from an examination before a committee of the House of Commons of Mr. Dickinson, Government Inspector of Mines, some interesting information respecting the coal mines of Belgium. These mines are all worked by private enterprise, mostly by small companies. The government is, to some extent, in the position of a lessor of the coal property. It prescribes the most minute rules for working the mines, determining even what thickness of vein shall be worked, and pays the landowners a rental for the coal so small that they, in many instances, do not think it worth collecting. Government thus has not only the right of inspection as a government but also as being in fact the owner of the property. On the whole, though the mines are well managed, their best mines are not equal to the best English mines, and they have some worse managed than any in the latter country. They have deeper mines than in England and use ascensional ventilation, using smaller air ways and a larger amount of power so as to make up for greater volume by quicker circulation. They are abandoning their furnaces and using suction pumps as producers of air currents. The best appliance of mechanical means for ventilation is that of M. Bedel. It consists mainly in applying contraction, and he attaches considerable importance to making the air pass a particular point whence the opening increases like a bell. The suction pump draws the air out from the up case shaft, and, of course, it must go down the other. The advantage of a mechanical power is that you can increase the intensity of the air current as may be found advisable, whereas the furnace power is not so easily adaptable. But to get a larger supply of air the furnace power is best. There is in Belgium a very perfect class of instruction in the technical college at Liege. All the mining engineers Mr. Dickinson had met in Belgium had gone through the prescribed course and were well educated men, and every person engaged in superintending had taken high degrees. There is no school in England comparable to those on the continent; the Royal School of Mines only teaches elementary knowledge suited for a viewer. The viewers, who have the practical working of the mines, are in Belgium appointed by the owners the same as in this country. The only system of work in the Belgium mines is the long wall. Taking away all the coal before them and working the coal in the same order, taking generally depths of thirty yards at a time. They will not allow the coal, as in this country, to work upwards without the consent of the government inspector in writing, and that consent is rarely given because they have an ascending ventilation, and gas is less likely to escape than it would be under other circumstances. The difficulties of working coal are greater, and the price consequently higher than in England because their coal is much twisted and contorted. Mr. Dickinson inspected a pit where they have gone through the same seam three times, and that is very common both in Belgium and the northern part of France. Near St. Givet one of the shafts is 1000 yards deep. The coal is exported by land into France to a considerable extent, and the remainder is used in their very extensive manufactories.

Great Saltpetre Cave.

A correspondent of the Missouri *Democrat* describes at length a visit to the great saltpetre cave, ten miles from Rolla, Phelps county, Missouri. There are many chambers of from 100 feet to 300 feet in length by from 25 to 75 feet in breadth, and sometimes with a heighth of 20 and 30 feet. The end of the cave has never been found, although persons have penetrated it to a distance of seven miles where the water runs the other way, indicating another opening. As our party, says the writer, visited the cave especially to examine into the practical value of this mineral, we will give some facts concerning it. By measurement this deposit is calculated to contain 50,000 cubic yards of this earth, impregnated with saltpetre and nitre. As to the quantity there is no doubt. The quality must be decided by analysis. This we know: that from a hole sunk four feet deep we wrapped specimens of the earth in white paper, and one specimen in a handkerchief, to keep them separate, and when we examined them a few hours later, the paper and handkerchief were eaten through by the mineral, and were consequently mixed together. Dr. Albert C. Koch, who is known as a reliable practical geologist and chemist, is so well satisfied with the deposit that he thinks of taking proper steps for establishing a manufactory at the cave. Those who wish a hand in, would do well to confer with him. Who knows but we will have these works in operation in time to supply saltpetre to manufacture powder here in Missouri for the European war?

Magnetic Discovery.

M. Gruss, of Paris, has discovered that the long spirals of iron and steel detached in the turning lathe are highly magnetic. Their polarity is permanent. Soft iron possesses this quality in the highest degree. The extremity first touched by the tool becomes the south pole, the opposite extremity where the turning finishes becomes the north pole.

The Mineral Land Act.

Following is the unwise Mineral Land Act recently passed by Congress, and approved by the President—the repeal of which we shall urge at the proper time:

SECTION 1. That the mineral lands of the public domain, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and occupation by all citizens of the United States, and all who have declared their intention to become citizens, subject to such regulations as may be prescribed by law, and subject also to the local customs or rules of miners in the several districts, so far as the same may not be in conflict with the laws of the United States.

SEC. 2. That whenever any person or association of persons claim a vein or lode of quartz or other rocks in places bearing gold, silver, cinnabar or copper having previously occupied and improved the same, according to the local customs or rules of miners in the district where the same is situated, and having expended in actual labor an amount not less than one thousand dollars, and in regard to whose possession there is no controversy or opposing claim, it shall be lawful for the claimant to file in the local land office a plan of the same, so [extended laterally or otherwise to conform to the local laws, customs, and rules of miners, and to enter such tract and receive a patent thereof, granting such mine, together with the right to follow such vein or lode with its dipes, angles and variations to any depth, although it may enter the land adjoining, which land adjoining shall be sold, subject to this condition, and upon the further indefeasible condition that the owners and occupants of the mine so appropriated and held shall pay into the Treasury of the United States in each and every year until the national debt shall have been paid, three per centum of the net product of said mine, vein or lode, which shall be in lieu of the stamp tax now levied upon bullion extracted from the public domain.

SEC. 3. That upon filing the plot and survey as provided in the second section of this act, the Register of the Land Office shall publish a notice of the same in a newspaper published nearest to the location of said claim, and shall also post such notice in his office for the period of ninety days, and after the expiration of said period, if no adverse claim shall have been filed, it shall be the duty of the Surveyor General, upon application of the party to survey the premises, and make a plot thereof, endorsed with his approval, designating the number and description of the location, the value of the property and improvements and the character of the claim, and upon the payment to the proper officer of five dollars per acre the Register of the Land Office shall transmit to the General Land Office said plot, survey and description, and a patent shall issue for the same thereupon, and the Surveyor General shall receive for such service such compensation as is allowed by law, with mileage not to exceed at legal rates the amount chargeable from the county seat of the county in which the claim may be situated to the said claim.

SEC. 4. That when such location and entry of a mine shall be upon unsurveyed lands, it shall and may be lawful, after the extension thereto of the public surveys, to adjust the surveys to the limits of the premises, according to the location and possession and plot aforesaid, and the Surveyor General may, in extending the surveys vary the same from a rectangular form to suit the circumstances of the country, and the local rules, laws and customs of miners; provided that no location hereafter made shall exceed three hundred feet in length along the vein for each location, with an additional claim for discovery to the discoverer, with the right to follow such vein to any depth, with all its dips, variations and angles, together with a reasonable quantity of surface for the convenient working of the same as fixed by local rules.

SEC. 5. That the President of the United States be and is hereby authorized to establish additional land districts and to appoint the necessary officers under existing laws, whenever he may deem the same necessary for the public convenience in executing the provisions of this act.

SEC. 6. That whenever adverse claimants to any mine located and claimed as aforesaid shall appear before the approval of the survey as provided in the third section of this act, all proceedings shall be stayed until a final settlement and adjustment in the courts of competent jurisdiction of the rights of possession to such claim, when a patent may issue as in other cases.

SEC. 7. That wherever, prior to the passage of this act, upon the lands heretofore designated as mineral lands which have been excluded from survey and sale, there have been homesteads made by citizens of the United States, or persons who have declared their intention to become citizens, which homesteads have been made, improved and used for agricultural purposes, and upon which there have been no valuable mines of gold, silver, cinnabar or copper discovered, or which are properly agricultural lands, the said settlers or owners of such homesteads shall have a right of pre-emption thereto, and shall be entitled to purchase the same at the price of one dollar and twenty-five cents per acre and in quantity not to exceed one hundred and sixty acres; or said parties may avail themselves of the provisions of the act of Congress approved May 20, 1862, entitled "An act to secure homesteads to actual settlers on the public domain," and acts amendatory thereof.

SEC. 8. That upon the survey of the lands aforesaid, the Secretary of the Interior may designate and set apart such portions of the said lands which are clearly agricultural lands, which lands shall thereafter be subject to pre-emption and sale as other public lands of the United States, and subject to all the laws and regulations applicable to the same.

SEC. 9. That whenever, by priority of possession, rights to the use of water for mining, agricultural, manufacturing, or other purposes have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes aforesaid, is hereby acknowledged and confirmed. Provided, however, that whenever, after the passage of this act, any person or persons shall in the construction of any ditch or canal, injure or damage the possession of any settler on the public domain, the party committing such injury or damage shall be liable to the party injured for such injury or damage.

SEC. 10. That the right of way for the construction of highways over public lands not reserved for public uses is hereby granted.

Oil Gas.

The peculiar flow of gas which generally accompanies the action of an oil well and which varies in intensity in the same well, and in different wells, is an interesting phenomena. This gas has been turned to very good account by many operators as boiler fuel. It requires considerable care in the arrangement of special tanks and tubes, and must be provided with safety guards in the form of gauze diaphragms, clock valves and watertraps, to prevent the occasional backrush of flame which a partially filled tube is subject to. As yet the processes of its combustion are rude, and much waste of value occurs, the simple introduction of a tube to the mouth of the furnace, without jet coals or plates, being the usual method.

Mining Summary.

California.

It is given out by the San Francisco *Press* that the mineral and metallic products of California for the year 1865, reached nearly $50,000,000—thus:

Gold and Silver	$44,984,546
Copper ore	1,821,360
Quicksilver	1,733,288
Silver ores	99,290
Lead ores, gold quartz, &c	27,067
Total	$48,665,591

This we do not believe. A large amount of the gold and silver above accredited to the California mines must have come from Nevada and other adjacent mining States or Territories.

Nevada.—From files of the *Transcript* up to July 8th we condense the following:—A new quartz ledge has just been struck about twenty yards back of the National Hotel. It surpasses anything in richness we have seen for many a day. The ledge is called the Italian and is owned by Sanguinetti and others. Their claim is seven hundred feet. The lead was discovered in the cellar of one of the owners, and was traced to an old shed formerly used for storing charcoal. Here a shaft was sunk, and at a depth of thirty-two feet from the surface the ledge was found, three feet wide: In every bucket of rock brought up hundreds of pieces of rock could be picked, which sparkled with free gold. It will pay at least five hundred dollars to the ton. Much of the rock contains any amount of splendid looking sulphurets. We have before us now a piece of rock from the ledge, which sparkles with free gold. The ledge runs through a number of gardens along Spring street. Yesterday afternoon several hundred persons examined the rock, and the ledge was claimed on either extension for miles. This ledge has been walked over by many persons for years, but it was probably thought too near home to be rich. We think it is the greatest discovery that has been made for months. . . . . A new mining district has just been discovered in this county, which bids fair to rival the famous Excelsior district in richness, if not in extent. Some eight or ten ledges, resembling very much the ledges of Excelsior, and prospecting equally well, have already been located. The district is near the Culbertson grade, and about two miles north of the Yuba river. The ledges are large and well defined. They run North and South, and may be easily traced by the croppings. A working assay has been made, and the rock yielded $285 50 to the ton. . . . . For several months past considerable prospecting has been done in the vicinity of Rough and Ready, and the work of miners is attended with most encouraging results. Recently four tons of rock taken from the Moniqua Ledge, was crushed, and yielded twenty dollars. . . . . The Star Company have struck an excellent ledge of quartz about four miles from Washington, in Nevada county. The Star Company has an excellent mill which was built about one year since. As soon as sufficient quantity of rock is taken out, the mill will be started. . . . . Since the recent purchase of rich gravel claims on Humbug creek by San Francisco capitalists, considerable activity is being manifested by the residents there. . . . . The quartz ledges a short distance from the town of Columbia Hill, are being developed very rapidly. The ledges in that locality are of good size, and the rock looks well. . . . . New discoveries of rich quartz ledges in Nevada county are made daily. . . . . Smith & Lindemer, in running a tunnel into their claims at Quaker Hill, a day or two since, found a nugget of fine gold weighing $282. . . . . A newly discovered quartz ledge, near Eureka, Nevada county, contains specimens which show considerable free gold, and any quantity of rich sulphurets. . . . . The Big Blue ledge, owned by the Murchie Brothers and others, is one of the best ledges in the county. . . . . The Ophir mine located near Grass Valley, Nevada county, is one of the largest and most promising mines in the State. . . . . Mr. Ross has shown the editor of the Grass Valley *Union* some rock taken from the surface of the Enterprise ledge, located some four miles above Omega, in Nevada county, which is full of free gold, and very rich and handsome sulphurets. It is thought that it will turn out to be the richest ledge yet discovered in that county.

Alpine.—From the *Miner*, July 8th, we condense as follows: "The Poe ledge of argentiferous galena assays by sample over $700 per ton. Dr. Ellis, of Carson, is building a smelting furnace to be completed in two or three weeks, and be followed by more if satisfactory results are obtained. . . . . The George Washington mine, which has been under lock and key for some months past, is now attracting considerable attention. Some time during the winter the workmen struck a small vein of very rich ore, and then it was the superintendent put the ban of secresy on all operations at the mine. As near as we can learn, without definite information, they have followed this vein some two hundred feet, and although the increase in amount of ore has not realized the hopes of the superintendent, they have sufficient of very rich quality to make it a dividend paying mine. Mr. W. D. Root, the secretary, has been authorized by the company to proceed to the mine and make all necessary arrangements for erecting furnaces, building mills, or otherwise placing things in working shape. . . . . A miner's meeting had been held in Monitor district, at which the old "dead head" little-or-no-work system was overturned by the workers. . . . . From the Silver Mountain *Bulletin*, June 23d, we take the following: The Balaclava vein is gradually increasing in thickness, and the ore improving. The Pennsylvania are still cutting across their ledge, and are in some fifteen feet, without any indication as yet of a back wall. There is a portion of this ledge, called the "boulder strata," that yields by fire assay over $600 per ton. . . . . The Koh-i-noor company have been engaged, the forepart of this week, in constructing a road for the purpose of getting down ore to be worked. They are making good progress. . . . . For the past two weeks Charles Uzay, Esq., assayer and metallurgist from San Francisco, has been testing ores from various ledges in our district, and the results obtained are, that we have three claims open, the ores from which yield by fire assay from $250 up to $467 per ton.

Sierra.—The Downieville *Messenger*, June 30th, says: There is considerable excitement at Poker Flat, over a rich quartz lead lately discovered there. The ledge is called the Meredith, and although the rock shows no free gold, every ounce is shown extremely rich when once crushed. A large number of locations were made. . . . . The Sailor company has a tunnel in some 75 or 80 feet. They will commence crushing in a few days. . . . . The Lone Star, at Pine Grove, has lately got into a new range of pay that yields much richer than usual.

Plumas.—Taylorville, in Plumas county, is becoming a place of considerable importance, in consequence of its rich copper, gold and silver mines, the agricultural value of the lands of Indian Valley, and its unequalled and salubrious climate. . . . . The Gifford company were offered $10,000 for five-sixths of their copper ledge, a few days since, which they refused. . . . Lovejoy & Jackson, Kelly & Co., and Bickford Bros., on Grizzly creek placer mines, are all busy and doing well.

El Dorado.—A quartz ledge, near Clarksville, in El Dorado county, owned by K. G. Winchell and others, assays over $200 per ton. The shaft is sunk fifty feet, and quartz has been crushed for the past two weeks. . . . . T. Jenkins, and other Folsom miners, recently struck a very rich cement claim, at Weaver Hill, El Dorado county, that prospects from ten to fifteen cents to the pan. Already a tunnel is run in over one hundred feet. A mill is to be put up at once.

Shasta.—The *Courier* of June 30th, states that four new lodes have been discovered and located in South Fork district. Two of them, the Cincinnati and Tewauwan, show very rich. The first named is about fifteen inches wide, and shows good mineral clear across and down some three or four feet, as far as sunk. . . . . The Chicago has been stripped over a thousand feet. For that distance, the ledge shows the same as when first opened. . . . . The Mammoth mill soon be running on rock from the Harrison lode, at Quartz Hill. There is already out fifty tons of first-class rock, from any of which good prospects can be obtained by the mortar and pan process.

Butte.—Work on Silver ledge, Cherokee, Butte county, is progressing rapidly. Rock from this ledge yields on an average $100 per ton. . . . . The work of erecting a mill on the Sherman ledge is now in progress and will be pushed to completion as rapidly as possible. The company have taken out and now have ready for crushing about 100 tons of rock.

Amador.—The *Dispatch* of June 30th, says: Mr. S. W. Bright and others in this place, have found a very rich quartz vein, near Scottsville, about a mile from Jackson. A shaft is being sunk on the lead, and the company will soon commence taking out rock for the purpose of having it crushed to test its worth. . . . . The *Ledger* says: The proprietors of the Coney lode at this place, have commenced sinking on their claim with very favorable results. As they go down the rock increases in richness and the vein widens. The rock they are now hoisting produces from a ton to a ton and a half of sulphurets per day, and these sulphurets are sold as fast as they are got out for one hundred and sixty dollars per ton, at the mill.

Humboldt.—The coal recently discovered near Arcata is stated by those who have tested it, to be of an excellent quality, fully equal to the best Cumberland coal. It ignites readily and burns freely.

Mariposo.—A correspondent of the *American Flag* writes from Hunter's Valley: La Victoire, the most famous of the copper mines here, has a vein of ore which is, in some places, 160 feet wide. This mine is worth, perhaps, $3,000,000; but it will not add much to the wealth of the State till the "freeze-out" game now in progress shall be played out.

Santa Clara.—The San Francisco *Mercantile Gazette* of July 9th says: In the New Almaden mine, whence 90 per cent. of all the quicksilver produced in this State is extracted, operations are being carried on with the energy and good results that have characterized the present management. 1300 men are employed, the reduction works have been increased, and great improvements in treating ore introduced. At the New Idria mines, work has been resumed. About 100 men are now employed on the Redington quicksilver mine, near Clear Lake. The following is a comparative list of the amounts of quicksilver exported up to date:

	1865. FLASKS.	1866. FLASKS.
To New York	3,020	3,050
Great Britain	4,200	3,000
China	7,000	5,752
Mexico	1,426	4,007
South America	5,500	1,000
Australia	200	575
British Columbia	17	2
Other countries	....	41
Total	21,363	17,427

The falling off this year is doubtless owing to the recent strike in the New Almaden mines.

Placer.—A ledge, three feet wide, has recently been struck in the Boulder mine, near Auburn. It is exceedingly rich rock. . . . . A number of capitalists from San Francisco are inspecting quartz mines in Placer and El Dorado counties.

Nevada.

The Comstock.—From the *Weekly Circular*, (dated July 7th,) of the San Francisco stock brokers, we take the following: The mining share market gives evidence of some strength, and although continued

apathy prevails, nearly all stocks have been dealt in at enhanced figures, closing less firmly, however. The aggregate yield of leading claims last month, embracing the Yellow Jacket, Gould & Curry, Savage, Crown Point, Hale & Norcross, and Imperial mines, amounted to nearly $800,000. During no like period within a year past has the bullion receipts of these companies been larger. . . . . Hale & Norcross met with no sale this week, but is well held at about $1,400 per foot. Advices from this mine are exceedingly favorable. A connection has been made between the 700 foot and 535 foot levels, giving conclusive evidence of the existence of a formidable body of ore throughout that distance. The vein of ore on the 535 foot level is now 30 feet wide, most of which, it is thought, will mill $45@$50 per ton. From partial returns, the receipts of bullion last month exceeded $75,000, and the full returns for June will probably increase the aggregate to $100,000. . . . . Savage rose from $900 to $917½, dropped to $910, and sold yesterday at $900. During the week ending June 30th, 771 tons of ore were extracted, and 696 tons were shipped, a large proportion being second-class ore. The northwest extremity of the ore deposit has been reached in the 6th station, but in following the lode to the southeast, a very good face of ore in the extreme end has been met with. The winze from the 6th level is down some fifty feet, and there is no particular change to note. Receipts of bullion for the month of June amounted to $30,000. . . . . Crown Point fell from $900 to $805, then sold at $810. During the week ending July 1st, 683 tons second and 12 tons of first-class ore were extracted. The ground in the lower drift is said to show some improvement. The yield of this mine last month amounted to about $105,000. . . . . Gould & Curry has been sold at $705 to $706, closing at $750 asked. We have been courteously furnished with the general account of the operations and expenses of this company for the half year ending May 31st, from which we glean the following details: During that period 33,705 tons of ore were extracted, and 33,057 tons shipped and reduced, yielding in the aggregate $908,-119—the company's mill turning out $667,712. The extraction of this ore cost $3.06 per ton; prospecting and dead work $2.04; accessory work $1.67; improvements, etc., 79c. per ton; total cost of production $7.56 per ton. The total cost of mining last year was $10.86 per ton. From the company's mill, for the six months ending as above, the average yield per ton was $36,90 per ton, at a cost of $13.57 per ton, the latter being upon the amount amalgamated. If reckoned upon the amount of ore crushed, as is usual in Washoe, the cost per ton would be $11.22, adding for hauling 90c, making $12.12 per ton. The receipts of this company for the month of June amounted to $146,000. . . . . Yellow Jacket is in less favor, and nearly 200 feet were dealt in, advancing from $692½ to $760, and selling yesterday at $742@$692½. No authentic data can be obtained this week, owing to the delinquency of certain officials in Nevada, but the receipts of bullion for the month of June are supposed to be in excess of $260,000. . . . . Ophir has also been in more request, steadily advancing from $215 to $258, and selling yesterday at $230. In sinking from the floor of the south end of the 9th gallery, it is thought that a very considerable body of ore has been met with. . . . . Chollar-Potosi rose from $158 to $230, dropped to $200, and then sold at $187@$192. The Piute Station continues to look well, and the ore found in that and the New Santa Fe Station, adds considerable to the general average throughout the mine. During the week ending June 30th, 861 tons of ore were shipped to custom mills. There is nothing especially new to report in the different drifts from the new shaft. . . . . Belcher rose from $165 to $195, receded to $190, and closed yesterday at about $190@$180. . . . . Imperial is meeting with more favor, advancing from $102 to $110, and selling at the close at $108@$107½. Recent developments with Holmes' ground are said to be promising. Receipts of bullion for the month of June amounted to $61,000. . . . . Overman, owing to the discovery of a small body of very rich ore, has been quite active at higher figures, advancing from $23 to $77½, receding to $54, and selling at the close at $60. Confidence rose from $55 to $70, fell to $55, and then sold at $57½. The assessment of $25 per share, levied June 25th, has been rescinded. . . . Bullion was dealt in at $67½@$55, closing at $55 bid. . . . . The total aggregate sales of stocks, legal tender notes and bonds, since Saturday last, amounted to $346,886.

Humboldt.—A correspondent writes from Dun Glen, Sierra District, to the Humboldt *Register* of July 7th as follows: Three years ago the fame of Sierra District was not confined to Humboldt county. It went up like a rocket; but, unhappily the simile continued until many of the best claims were neglected or abandoned. Confidence, however, was never lost. The "Monroe" boys took the lead—pitched into their ledge—crushed rock in a mortar—then sent ore to the mill; got big pay, and finally commenced operations on the mine in a systematic manner. Three shafts on the ledge—forty, fifty, and sixty feet respectively, with work progressing. Lowest grade ores yield $40, higest $100 per ton. Little of the latter is now worked, from the fact that the gold, being in sulphurets, it is difficult to separate. It is the intention of the company to erect a mill from the profits on ore extracted in developing the mine. . . . . The Humboldt River Gold and Silver Mining Company has several men at work on the first south extension of the Monroe, where the ledge is found, with good prospects. The same company employs eight or ten men in the vicinity of Barbersville, on various ledges. Two on the Mazeppa; ledge stripped naked. Of course I did not look at it. Never name a ledge Mazeppa—for you'll surely strikes a "horse;" and such animals are not favorable indications in quartz ledges. . . . . In McCann Canon are six men at work on the Pauline. Shaft fifty feet down—ledge four feet wide. Ore assays $800—have had none worked. Riding over to the Gem, I found four men at work on the day shift, extracting some of the best silver ore in Nevada. J. C. Fall, Esq., has the management of the mine, and promises to make regular shipments of bullion from it. In Chrysopolis Canon the Humboldt River Company has a considerable force of men at work on its ledges, one of which, about two feet in width, is well charged with sulphurets of silver of a fine quality. The next lead of importance on the way to Dun Glen is the Sheep Ranche—Bronson, superintendent. The claim is 4,000 feet, which increases in proportion to the work done on it. On the Empire, Essex, and Diadem, I found seventeen men, and every man a miner. The fact that Hon. Jas. A. Banks is superintendent is sufficient guarantee that good work is being done. The Ophir lode, on the Empire series, presents a very favorable appearance. It is a true fissure vein, three and a half feet wide. The ore is a fine quality of sulphurets, easily extracted, and easily reduced. The old shaft has been sunk to connect with the main tunnel, which gives good ventilation to the mine. The aggregate of shaft tunnel and drifts, in this vein is about 500 feet. Other ledges in the Empire series are now in progress of development, two of which are inferior to the Ophir only in point of size. A Tunnel in on the Essex three hundred feet, with one hundred feet more to run before striking the ledge. It is generally believed that the Tullulah Company will soon resume operations. A majority of the stock has been sold to English capitalists, who know the value of the mine. There is good reason to believe that all these mines will be worked with energy and profit. The companies have money and nerve.

Volcano.—The Volcano District, says the Esmeralda *Union*, contains a territorial area of about twenty square miles, and is situated fifty miles in an easterly direction from Aurora, and about thirty miles due east from the south end of Walker Lake. It contains a number of fine ledges of silver and copper ore as well as all the necessary elements for the proper and successful working of the same. During the past year some valuable discoveries have been made, but more recent explorations, made by Messrs. Jamison, Mitchell and others of this place have developed other ledges of a more valuable character, from the fact that they are not only richer in both silver and copper, but the abundance of wood and water found in close proximity to the most prominent and important ledges make them a desirable property as a means of investment with a view of receiving a profitable return or interest on the capital employed in their working and development. The general course of all the ledges found in this district, is of an easterly and westerly direction, with bold and prominent croppings of from ten to thirty feet in width, in which are found rich streaks of the sulphates of silver and copper, varying from ten to thirty inches in thickness. Eighteen different kinds of silver and copper ore have been discovered from which one hundred assays have been made, with an average result of about forty-five per cent. of copper and highly satisfactory returns of silver. Nearly all characters of copper ores are found, including the red and black oxide. The most noted locations are the Nevada, Excelsior and Copper King.

Battle Mountain.—The *Reveille*, noticing a copper bar exhibited at Austin, says: The article was pure, and as pretty as the face of a Shoshone maiden. The bar weighed forty-three ounces, and was obtained from sixty ounces of pure red oxide of copper from the Troy ledge, Battle Mountain District. The operation was delicate and troublesome, and required four distinct manipulations to reduce the mass to metallic copper. The bar was reduced for I. C. Bateman, who is largely concerned in the district.

Pahdet.—The Aurora *Union*, of June 30th, says The Fitzhugh mine, located in the Pahdet district, distant thirty-five miles due east from Aurora, prospects well, a quantity of ore from it yielding at the rate of $130 to the ton. There are a large number of gold, silver and copper-bearing lodes in the same district.

Masonic.—The Masonic District, situated about sixteen miles north of Aurora, contains mines which, the *Union* thinks, will ultimately be the most valuable mining property in Esmeralda county. The names of the principal ledges are the Mount Moriah, Rough Ashler, Perfect Ashler, and the Three Ruffians.

Colorado.

Writing from Oro City, the editor of the Denver *News* says: From information that we gathered, more work is being done, and better pay realized this year in the the placer and bar diggings in Summit county, than for several years past. One claim upon Buffalo Flats is paying day after day, almost one hundred dollars per man. Others in the different gulches yield from one-third of an ounce per day to the man, with a number of exceptions that exceed the largest sum mentioned. From Oro City, at which place we wound up the Fourth so agreeably, we proceeded down California gulch and the Arkansas bottom to the Twin Lakes. Our party was increased by the addition of Gen. DeMary, W. Londoner, Esq., and Mr. Spicer. At Colorado gulch, which enters the Arkansas directly opposite the mouth of California gulch, quite a number of miners are at work and doing well. The next mining work going on is along Lake Fork, in Red Mountain district, and is mainly in the development of lead property. Nearly thirty men are engaged in that business. . . . . Just above Cash creek the old Richey patch is being worked successfully. Lost Canon is also receiving some attention this season. Cash Creek is insufferably dull. The property has all got into the hands of one company—represented by Gen. Geo. W. Lane, of Denver—which does away with the variety of enterprise, observable when a great number of men are working upon their own account. We understand that the company is doing well, and it certainly has an immensely rich property. Below Cash Creek there are no mining works of any kind. . . . . The editorial party (which includes Bayard Taylor) were driven back from the Canon City route, and turned Denverward by way of the Salt works, where, says the writer, they stopped for the night. The works are under the superintendence of Chas. L. Hall, Esq. Their present capacity is from eight hundred to one thousand pounds of salt per day, but new works, already planned, will increase the daily yield to as many thousand pounds as they are now giving hundreds Workmen ware already on the way from Denver to construct the necessary buildings, furnaces, &c. The full capacity of the springs is estimated at forty to fifty tons of salt every twenty-four hours. The water yields about half a pound of salt to the gallon. This yield, it is thought, can be materially increased by boring and tubing to a moderate depth, as the brine now leaves the springs charged with great quantities of surface water with which the ground is completely saturated. A saw mill at the springs supplies all necessary lumber cut from the timber which covers the adjacent hills. Next summer it is in contemplation to put up a great number of vats for the manufacture of salt by solar evaporation, ... The *News* learns that there is quite a stampede to Bear River. All sorts of fabulous stories concerning the richness of these new mines are being circulated, and having the usual effect. Latest advices from Bear River, July 4th, do not give any ground for these wonderful stories. An old prospector says, that the prospects are good, though he has not yet discovered anything to warrant the present excitement. He is working a claim with good encouragement as to future pay. The bed-rock has not yet been reached in any of the claims now being opened. The quartz in the lodes of the Bear River region, is so totally different from that found in other sections of the Territory that prospectors are at a loss in estimating its value. Indications seem to justify a belief, that there are good mines, both lode and gulch, but there is nothing positively known that authorizes the present excited rush to the country. . . . . From Breckinridge comes the news of a new gold discovery in the South Park, near Buffalo Springs, and about fifteen miles south of Fairplay. There was a general stampede to that locality. Fairplay is said to be entirely deserted by its male population, and Buckskin Joe had but three men remaining. Several dollars to the pan are reported, and a large district of country is said to be richer than any gulch or placer diggings ever before found in Colorado. All the mining camps in the vicinity are being materially depopulated. . . . . A correspondent writes from Red Mountain, June 30th, as follows: The district, since its consolidation, embraces the whole country lying on Lake creek, from the Twin lakes, at Dayton, to Red Mountain proper. The extreme length of the district is nearly fifteen miles, and embracing the ranges of mountains lying on either side of the creek. Most of the lodes, that were taken in '64 and '65, were taken on the left hand fork of the creek and on McNasser creek. The character of the ores in this end of the district is such and the "croppings out" of them so prominent, that no one who is at all familiar with lode mining in Colorado, can fail to see that but a short time will elapse ere this is one of the richest gold producing districts in the Territory. Marcosite is the prevailing type of ore, while near the lakes, in the eastern portion of the district, Galena, Bromide and Chloride of silver are plainly discernable. These combinations of metals or ores will probably terminate in well marked pyritous ores, if followed down through the surface showings. The lodes in the vicinity of the lakes, being so much easier of access, will, undoubtedly, prove the most valuable in the end, though the upper end of the district seems to have the start in matters just at present. The Broadway Company, under the auspices of N. F. Spicer are commencing operations in developing their property in Morgan Gorge and the country contiguous, and I am informed that the Mint Company, and some others, are about to commence operations. Gulch mining in Cash Creek, Colorado Gulch and old California Gulch is being prosecuted with very good success the present season. . . . . The *Register* says: An immense vein, containing more than four feet in width of gray sulphuret of copper has been struck recently in the mountain near Golden City. . . . . It is an item worthy of general notice, that there is a greater amount of mining being done in our vicinity at this time, than for years previously. The liberal offers made for good ores by Lyon and others, have been a general incentive to miners. . . . . Henry Grannis is pushing forward with great energy, the work of disentombing the Delaware lode. By next Monday he hopes to begin extracting ore. At that time we shall endeavor to be on hand to maks a further report of his proceedings. . . . . The *Journal* says that Mr. Rothpletz recently returned from Philadelphia, having secured a large sum with which to develop some lodes he owns in Argentine District. His camp will be on Quail Creek, and he intends to work from as near the creek level as possible. Like most other parties now operating or thinking of it, all his energies are to be directed to developing his mines. This makes well on toward a dozen such enterprises uow being prosecuted by eastern capital, in Georgetown and Argentine Districts. The smelters are getting along rapidly and have high hopes, and the district is constantly extending; the fact is, the entire Range around the heads of Clear Creek is full of silver and gold veins, as time will yet demonstrate. . . . Ed. Moore recently started the Holbrook Mill. We may expect this to go on as wages and living and supplies fall. . . . . The Monnier Muffle and works are being pushed forward in Nevada by a new management of the Philadelphia and Colorado Company. . . . . A Georgetown correspondent of the *Register* writes: "Although this is an old district, it has only recently been "born again," and is now making a start for glory. The Argentine excitement of last season extended down this far and the discoveries of galena lodes were truly marvelous. There are four or five lodes here, which will build up a large and thorough town, even if all the others should prove failures. There has been nothing done towards developing, until quite recently. The great bulk of the property has been tied up in the hands of speculators who have been vainly endeavoring to interest the eastern capital in the district. The owners are now congratulating themselves, as the bonds expire, that the property did not sell, because they see that they can make more money by working the property themselves. One lode, I may mention, which could have been bought last fall for $5,000, has already produced ore sufficient to bring that amount of money at $50 per ton, at a cost of not more than $500. It has

been badly managed too. Quite a number of smelting works are going up, but it will be some time before they will get to making silver bricks. There is one small furnace completed which will begin smelting this week. They are having the ore packed down on the backs of donkeys, at a cost of five dollars per ton. This would make the ore cost between $20 and $25 per ton at the furnace. But, of course, this old-fashioned plan will not be followed long. Some prospectors have recently discovered large copper lodes up the south branch of the creek, on the left hand side of the Breckenridge trail.

Kentucky.

A recent letter from Louisville to the *Mining and Manufacturing Journal* runs thus: "The parrot coal and bituminous coals afford a vegetable tar or thick crude oil from which two products may be obtained.

(1) Refined burning oil..... 25 per cent.
(2) Paraffin " " ..... 18 per cent.

The Breckinridge coal gives this result. An analysis of some varieties of western Kentucky coal has been made. Hawesville coal, left bank of Ohio, 120 miles below Louisville, bed 4 feet thick. Upper 18 inches cannel coal, remainder common bituminous.

Carbon	48,40
Bitumen	48,80
Ashes	2,80
	100,000

Hawesville is 258 miles above the mouth of the Ohio. The coal seam is nearly horizontal and appears on both sides of the river. It is compact, conchoidal, produces a bright flame, does not adhere in burning but falls into a white ash. It is heavier than the cannel coal of England, as will be seen by the accompanying analysis:

	Spec. Grav.
Hawesville	1.250
Cannel of Jackson Co., O.	1,410
Lancashire Cannel	1,199
Ingolten Cannel of Yorkshire	1,195

An analysis of the Caseyville Cannel coal gives the following result:

Volatile matter	31,80
Fixed carbon	44,50
Earthy matter	23,70

The comparative value of Caseyville coal may be shown as follows:

	Volatile matter.
Cambria County, Pa.	18,02
Caseyville, Ky.	31,80
Osage River, Mo.	41,35

The general fact that the proportion of bitumen increases as we go westward is here well exhibited. The qualities of Kentucky coal are shown to be next to Pittsburg coal for manufacturing purposes. The supply of coal is enough for all southern and western markets, though what has thus far been produced was for home markets merely, and mined for the most part in Breckinridge, Grayson and Greenup counties. We have no doubt that the increased attention now given to manufactures in the chief towns of the State will open more fully these vast sources of wealth. With reference to the iron ores of Kentucky, in the coal fields of the eastern and western portions of the State, they are inexhaustible and co-extensive with the coal measures. The following varieties are found: (1) Hydrated peroxide of iron; (2) Carbonate of iron; (3) Argillaceous iron ores. The hydrated peroxide of iron is the iron of the coal measures. In Lawrence, Johnson, Floyd, Pike, Letcher and Perry counties, Dr. Owen describes numerous exposures of coal measure ore. The Kidney ore of the Swift mine on Yellow Creek, contains disseminated sulphuret of zinc, lead silicate of alumina. The silver iron ore in Whitley county, below the falls of the Cumberland, is sub-carboniferous ore, containing 42 per cent. of iron. In Pulaski county this ore bed is from 15 to 20 feet above the sub-carboniferous limestone. This is another more productive one 90 feet above it. In the southeast part of Pulaski county the coals of the Cumberland and Rockcastle rivers can be traced along the waters of the Indian creek with considerable beds of carbonate of iron, occupying a geological position apparently identical with that of the Nolin beds in Edmonson county. In the level county of Laurel, underlaid by the conglomerate, the shales of the lower coal measures contain large quantities of ore, associated with a three feet bed on White Oak branch of Little Rockcastle River. A section of the measures at this point gives the following result: Millstone grit sandstones 60 feet; shaly sandstone and ferruginous shales 238 feet; sub-carboniferous limestone 102 feet, etc. It is estimated that the average thickness of the iron ore strata in east and west Kentucky will reach three feet. Each cubic yard would yield an average of one ton of bar iron, there would be 5,000 tons to the acre; 3,200,000 to a square mile, or 384,000,000,000 in 12,000 square miles, enough to supply every inhabitant of the United States one ton for 1,280 years, counting our present population at 30,000,000. The ore banks of the Sandy, Mt. Savage, Star, Bellefonte, Pennsylvania and Amanda furnaces in Greenup county, have beds of iron ore varying from 3 inches to 4 or 5 feet in thickness. The ores belong mineralogically to the family of limestones or hydrated oxides, yielding from 27 to 60 per cent. of metalic iron. They lie on or between shaly beds, sometimes resting on or overlaid by limestones that are often highly ferruginous, yielding from 7 to 25 per cent. of metalic iron. As the furnace slag is an index to the quality of iron simultaneously produced, its analysis will determine its nature. Its constituents are found to be silica, lime, alumina, with small quantities of magnesia, potash, soda and sometimes protoxide of iron and maganese. The former impractability of these ores did not arise from the impurities of sulphur, phosphorus, arsenic or zinc, but from their richness, containing as they do from 60.9 to 39.4 per cent. of metalic iron, and only from 3.49 to 9.47 of insolluble silicates, while ores highly esteemed contain but 29 per cent. of iron and 45 per cent. of insoluble silicates. Lean or ferruginous slate have been introduced to decrease the per centage of iron in these ores. The best ores in Kentucky are found in the lower coal measures, but there has been found very excellent black sand ore high up in the upper measures of Muhlenburg county. The beds are but 6 inches thick. There are quantities of iron stones in the upper coal measure in the shaly beds lying some distance under the Bonharbour coal. All the localities on Cave Run, Stuarts, Richland and Flat crecks are outcroppings of the same bed. On the headwatero of Stuart's creek and aggregate of shale layers 21 inches, and of ore layers 6 inches presented the following section:

Black bitum. shale—in..... 6, 1, 3, 3, 2, 6.
Black band ore..... 1, 1, 1, 1, 2,
Bluish (fire) clay under all..... 12†

Under the fire clay are evidences of a bed of limestone. In Muhlenburg and Hopkins counties in western Kentucky are numerous beds of crop brown hematite and of ferruginous black slate. Samples from Hopkins county weighing from 2.56 to 2.71 uniformly black or gray black yielded only from 6 to 7 per cent. of iron, while they contained from 40 to 70 per cent. of carbonate of lime. A bed of iron ore 3 feet thick is reported under the limestone at Williams' Landing on Green river. A section examined showed the following result: Limestone 3 feet, iron ore 3 feet, sandstone 15 feet, shale 15 feet, coal 8 inches, hard sandstone and ironstone layers 58 feet, block band 1 foot, coal 2½ feet, fire clay 4 feet, iron ore balls and bituminous shale 6 feet, hard calcareous rock containing pyrites 3½ feet, ect. The famous icehouse coal of Union county, has a specific gravity of trom 3,125 to 3,591. An analysis gives: Iron 43.76, oxygen 10.84, carbonic acid 31.00, silicates 8.50. Argillaceous iron ores occur in the coal measures in bands and flattened lumps. A bed of shale ten feet thick overlaying the "Icehouse" seam, included 7 or 8 thin bands estimated to amount to 16 inches in the aggregate. The ore was slightly calcareous, well adapted to smelting, and promising to yield from 30 to 40 per cent. of iron. Considerable quantities of carbonate of iron are interstratified in the shales overlying "Thirteen Inch Coal" near low water mark at Coal Haven at the head of French Island.

Missouri.

EDITOR JOURNAL OF MINING:—SIR: I am anxious that Missouri should be fairly represented in your valuable paper, for I believe that she is rich in mineral resources, and that more is now being done to develop them than the public are aware of. Probably no one has done more to bring foreign capital into this State, to invest in working mines, than Mr. Alfred Clapp, of St. Louis. Having recently visited with him the mines in which he is interested, I send you the result of my observations. The Peninsula Lead Mining Co. own 580 acres about 60 miles sou'west from St. Louis, on the sou'west branch of the Pacific Railroad, in Franklin county. The property is on a peninsula of the Bourbeuse river. From the borders of this stream the rocks rise up in perpendicular cliffs to the height of 50 feet, with an additional 50 feet of steep acclivity covered with soil and wood, making an entire height of 100 feet, thus giving superior facilities for drifting and drainage. The rocks by the riverside all show lead in their crevices. The whole property is covered with float mineral in large crystalline cubes, the angles sharp and well defined, showing that they have not been transported thither by water. Twenty shafts have been sunk on the property, each to the depth of about 40 feet, in all of which mineral has been found. The principal shaft is at the base of a hill. Out of this shaft large cube mineral was taken, some pieces weighing 400 lbs. A tunnel is being pushed through the hill, following a lead. This tunnel was commenced in a ravine about 100 feet below the summit of the hill. The tunnel has good cap rock, and a level floor 4 feet 6 inches below this. After blasting through 10 feet of magnesian limestone they broke into an opening filled with clay, tumbling rock and mineral, and having good wall rock on either side, about eight foot apart. This opening has been followed about 180 feet, also several branches leading off, making over 400 feet of tunneling. From all of these mineral has been taken. Over 300,000 pounds of ore have been taken from this property, but the main deposit is not yet reached. This ore yields on assay: Lead, 86.6; Sulphur, 13.4. The Excelsior Mining Co. own 300 acres in Franklin county, six miles south of St. Clair. Through their property a vertical vein has been traced for one mile by shafts sunk at various intervals. The principal shaft commences 100 feet above the bed of a stream, and 100 feet below the summit of a hill. Lead was found six feet below the surface in a vein 1½ inches wide. Where they are now working the vein is 14 inches wide. The shaft is 5 feet by 10. For 10 feet it passes through clay, next through limestone for 13 feet 4 inches, and next it strikes a bed of flint. In working through this seventeen to nineteen drills were required to put one hole down twenty inches. The labor was great, but miners are hopeful. Ten, twenty, thirty, forty feet were passed, and still the flint held out. Frequent were the consultations of those interested, and orders were as often given to go ahead, for dritting was useless in that rock, and the shaft must go down or all that had been done would be lost. The principal encouragement to go on was the gradually increasing width of the vein. Prof. F. McArdle, a mining engineer of St. Louis, being consulted, strongly advised sinking deeper. Forty-five feet were passed and still the flint held out. The Company were about abandoning the shaft to commence elsewhere, but Prof. G. C. Swallow, late State Geologist of Missouri, happened to be present at the consultation and advised them to go on, saying that he had measured a great many beds of flint in this State and never found one to exceed 50 feet. Mr. Alfred Clapp, of St. Louis, the Secretary and Treasurer of the Company, then directed the Superintendant to drive the work for twenty-four hours, when he would come and see him again. The next day he went and found that a blast just let off had penetrated the flint, and they are now working in magnesian limestone, where two drills put a hole 26 inches easily. The Company are elated at their good fortune, and are heartily congratulated by the mining men of the district, one of whom told Mr. Clapp that his perseverance in penetrating that flint was worth one hundred thousand dollars to Franklin County, as other operations were depending on his success. The New Era Lead Mining Co. are working on the Bourbeuse River, about four miles west of the Peninsula Co. They have a tract of 200 acres. Two drifts have been run into a hill, each of which passed through several strata of mineral. Considerable ore has been taken out in the shape of heavy cubes. These drifts are the largest that have been opened in Missouri. The work is superintended by an experienced miner from Wisconsin. About 220 feet of drifting has been done. The Company are encouraged at the results so far, and Mr. C. G. Wicker, a leading commission merchant of Chicago, and one of the owners, told me that he would tunnel the hill if necessary, for he believed that the lead was there. A new era is dawning for Missouri when such energetic capitalists take hold of her mines. There are several other mining operations going forward in this State which I would like to report, but I will reserve those for another communication.

FRANK H. FLETCHER,
late Lieut.-Col. and Paymaster,
St. Louis, Mo., July 28, 1866. Regular Army.

Virginia.

A correspondent of the *Post* writes: "Having just prior to the rebellion carefully examined the field north of James river, and having trustworthy information regarding it, corroborated by my own examination, I would take the liberty of submitting the results, should you see fit to give them publicity, believing that they would be at this time generally interesting. The Springfield and Deep Run property, north of James river, part of the Burton estate, was the only one that had been worked sufficient to prove that there was an abundance of good coal, so located that it had very great advantages over all other bituminous coal that had then been discovered; that it could be mined and delivered in New York two dollars per ton cheaper than Cumberland coal; that it was more suitable to locomotives and steam generally; also, that it was a fa r gas coal, yielding more gas and coke than Nova Scotia coal. These facts were proved by Professor Johnson's report to the United States government, which were to the effect that coal from the south side of James river was ten per cent. better for steam than Sydney coal, and that Deep Run coal from the north side of the James river was twelve and a half per cent. better than coals from the south side of the river. A geological report, made shortly before my visit, stated as follows: 'The Richmond coal field ranges north-northeast and south-southwest from the Appamattox river on the south, to the Pamunkey river on the north, a distance of thirty-two miles or more. The greatest breadth is about ten miles. Upon the Springfield and Deep Run property are some twenty or more pits to be seen, which were sunk long since, from each of which coal of fine quality has been mined, and the specimens proved very satisfactory. There are already proven, by shafts sunk on the property, two seams of coal, the upper twelve feet, and below it one of seven feet. These seams are separated by stratas of slate, shale and rock, amounting to 140 feet in thickness. The upper, or twelve-foot, vein on the eastern side, lies about thirty-five feet below the surface, dipping in a westerly direction. There is at least one, and probably more than one, vein of coal underlying the two already described. The coal from these pits was experimented on by Professor Walter A. Johnson, and in his report to the United States government he speaks of it as being superior in strength and quality to any other found in the Richmond coal fields. The same veins are also opened beyond the property in question, in the continuation of the basin northward, thus proving the regularity of the measures. Estimating the two veins to give 24,000 tons per acre, and 1,000 acres of the Springfield and Deep Run property being coal lands, there would be 24,000,000 tons (say twenty-four millions of tons), not considering what extra coal may underlay the above, and which may be developed hereafter.

'ANALYSIS OF THE TWO VEINS.

12-foot vein.		7-foot vein.	
Carbon	68.10	Carbon	68.00
Volatile matter	27.30	Volatile matter	25.30
Cinders	4.60	Cinders	6.70
	100.00		100.00

Another celebrated geologist subsequently examined this property, and confirmed in every respect the report already quoted from, and in addition states as follows: 'The coal at the mines south of James river rests on granite, and is conformable to the uneven nature of the surface of the granite rock; it (the coal) varies in thickness from four to forty feet and upwards. Of course this variation applies only to the bottom vein. The veins at Springfield are higher up in the series, and it is probable that the bottom vein will be found there, as at other places in this region, of variable thickness, and in places of mammoth size. The coal of the northeastern part of the Richmond coal field is harder, and will bear transportation better than that from any other part of the basin. One great advantage it has, which should not be overlooked—it is comparatively free from sulphur, therefore not liable to spontaneous combustion; the mines, in consequence, have less of the deleterious gases which have been a great drawback and expense attending the operations on the south side of the river, in the "southern prolongation of the coal field."' On the north side of the river there are several other pits at work, viz.:

The Dover pits, on the James river canal.
The Carbon hill pits, 3½ miles from the canal.
The Tuckahoe " " "
The Trent " " "

They are at a distance of fifteen to eighteen miles from Richmond, sending their coal by canal, costing, delivered there, not exceeding two and a half dollars per ton, and sold chiefly for the consumption of the city. The quality is considered very good. The Springfield and Deep River Company have about 2,800 acres of the Burton estate, about 1,000 of which is considered to be underlaid with coal. They have a railroad connection

with the Fredericksburg road to Richmond—a distance of eleven miles. They are now mining and delivering coal into their yard at Richmond at $1 50 per ton; to place it on board at Rocket's it costs $1 25. Freight to New York, $2 50; making the cost, delivered, $5 25 per ton. With a connection with the Petersburg road, and thence to Port Walthall as a shipping point, a saving of at least one dollar per ton can be made. The first cargo of this coal is now loading, and a regular supply will be forwarded to this market. There are other coal properties in this basin that will soon be in operation, and, as the attention of capitalists is now drawn to this great deposit of superior bituminous coal at low cost, there is every prospect of having, ere long, a large supply in this market on more moderate terms than from any other quarter, making us independent of Nova Scotia. The mines on the south side of James river now working are from eight hundred to one thousand feet in depth; of course the expense is much greater for mining. The greatest depth to mine out the two veins on the north side will not exceed two hundred feet, and the great or lower vein is expected to be reached at five hundred feet, and that it will be from fifteen to twenty feet in thickness; also of very superior quality to the upper veins.

Arizona.

A telegram from San Francisco, July 23rd, states that a letter from Prescott, Arizona, reports that numerous quartz-mills are being erected in that vicinity, and represents mining operations there as flourishing. . . . . In an article relating to this Territory an exchange says: The mineral resources, however, must be relied on to populate the country, and these, it is believed, are not surpassed by any other portion of the United States. Little prospecting or work has been done as yet, but from what has been done, the prospects warrant the belief that great results can be produced with capital and labor. An unjust prejudice has been created against the mines of Arizona by an injudicious and almost reckless expenditure of capital in the southern part of the Territory, some years since, and before the northern or central portion of the Territory was explored. But little was known of that part of the Territory lying north of the Gila and east of the Colorado, until 1862, when placers were discovered at La Plaz. These placers attracted a large number of miners and prospectors, who discovered and located on and near the multitudinous copper and silver mines. About the same time rich placers were discovered at Weaver, about one hundred miles east of La Paz. Shortly after—in 1863—placers and gold and silver leads were discovered further east and north in the vicinity where Prescott now stands. The placers were rich and in some cases quite extensive, but the lack of water discouraged Americans from working them; so that, after getting the cream, they were in most cases abandoned to the Sonorians, who still work them to some extent. It is estimated that over a million in gold has been taken out of placers in this region. The copper, silver and gold leads—discovered about the time of the collapse in Washoe mining stocks—have never been worked to any great extent. A few copper mines near the river at William's Fork have yielded good returns, and some of them are now being worked vigorously. It is said that there are immense deposits of rich ores, and from results obtained from shipments made here and sold, there can be no question that with capital, to afford facilities for transportation, a large and profitable business can be made in copper. Of the gold leads fabulous stories are told. The Discovery claim (300 feet) on the Vulture, situated about one hundred miles east of La Paz, was lately sold to a New Yorker for $75,000. Some five hundred tons of it have been crushed, which yielded an average of $73 per ton. Of the gold leads near Prescott—where the facilities of wood, water and grass, are unsurpassed—rich assays have been obtained, and we shall soon know the practical results, as several mills are in process of erection.

Utah.

The *Vedette* July 5th says: The mining interests of Utah are advancing with astonishing rapidity. Almost every day capitalists are arriving from the East and West, en route for Stockton, Pahranagat, and the other mining districts. Two large companies have just been formed in New York, and have machinery en route for this territory, which is to be used in working some of the Stockton ledges. A large number of other companies have been formed in the East, who have invested largely in the Stockton mines, and will in all probability send out machinery this season. The Cottonwood, Bingham Canon and Deep Creek mines are also being developed with the most favorable prospects. Our mines are capable of being worked to better advantage than any others in the territories. Wood, water, coal, timber, &c., are found in abundance in the vicinity of all the principal mines. The climate is such that operations can be carried on throughout the entire year, while the agricultural resources of the territory, and the means of communication with other producing sections, are such that a person can live with less expense than in any other mining region in the territories. With all these advantages in our favor, we believe that Utah is to-day the best mining section in the country. New mines are being discovered daily. Last week some good leads were found twenty or thirty miles north of this city, and we have been shown some really fine specimens that were taken from ledges not three miles from our office.

New Hampshire.

At Lisbon, the headquarters of the gold excitement, writes a correspondent to an exchange: "There is congregated a mass of humanity who are deeply interested in the gold mines. Colorado, Idaho, Nevada, and California are largely represented, and "mine talk" is rather abundant. You tickle me and I'll tickle you, and we will divide the pluckings of the 'geese,' is the order of the day. Gold in ledges, gold in streams, gold in stone walls, is the constant theme. One man found a piece of gold in a stone wall: first reported value $6,000; present reported value $15; actual value, uncertain. It is no uncommon thing for a man to make $15,000 in a few hours. Some have made $40,000 in a morning. They will wake up some morning and find that if they pay their landlords bills, he will be the only one that has made money. The rocks of the country are talcose slate, and the lodes, or ledges, occur as intercolated beds of quartz, presenting a ferrugenous appearance at the surface, with an occasional speck of free gold. A few feet from the surface, sulphate of iron is present in the rock and in seams; a few more, and the ledges are generally grey quartz, presenting a gneiss nodule character, with minute specks of sulphate of iron. If there is any gold in this rock, it can only be obtained by a thorough pulverizing of the rock, and then amalgamating in the best devised machinery.

Oregon.

From persons who recently arrived from the John Day country, says the Dalles *Mountaineer*, we learn that there is a great scarcity of men in these mines. For months back the great difficulty has been in the mines of the John Day to find laborers. Mines of untold richness in that country lie unproductive for the want of men to work them. The rule that obtains elsewhere is here reversed, the labor seeks the man. The placers that furnished employment for one man last season now demand three. The recent rich discoveries on Olive Creek and the waters of the John Day, have nearly depopulated other camps in that district. The ruling rates for laborers is $5 and $6 per day; and with another season the competition for labor will be doubled, and as a consequence the rates will advance.

Nova Scotia.

The gold-bearing rocks of Nova Scotia extend for 300 miles along the Atlantic seaboard of that peninsula. Their existence, if we may judge by the names on the coast, which is not the worst of testimony, may have been known to the early French settlers of this colony, the old Arcadia. For instance, we have Bras d' Or, Cap d' Or, and Villa d' Or ("Or," as most of our readers are aware, is French for gold). Whether the existence of gold was known to the French or not, it had been unknown during the English occupation until 1860, when it was discovered on the Tangier river. In 1861 a rush was made to the district, and at one period more than 1,000 hands were daily occupied in mining and prospecting, and large hotels and stores were built by speculators. The number was, however, soon reduced, the average for four years being only 85. The next gold field discovered was in the same year at Sherbrook. Nelson Nickerson, of that place, having visited Tangier, and become acquainted with the appearance of gold quartz, noticed specimens of it in his hayfield, which had been exposed by the action of old bush-fires. His neighbors suspecting that he was getting gold, watched his movements for some time, and at last he was discovered by the sound of his hammer. As soon as the fact was known, over 200 men assembled on the ground, and that very day obtained gold, by breaking quartz, to the value of about $400. A surveyor was immediately sent down, and within fifteen months 480 acres were leased. It has yielded next to Waverley in value, and more than one-fifth of the whole produce of Nova Scotia. The Waverly diggings, however, is by far the most prosperous. It has become a thriving village, with nearly 2,000 inhabitants, and has supplied nearly two-fifths of the whole yield. The greater part of the gold raised here is by a German mining company, managed by Messrs. Barkner and Ellershausen, formerly of New York. The quartz is low in yield, being 18 1-10 grains per 100 pounds; but it is easily quarried, is near to the metropolis, and transport and crushing facilities are always at hand. The Isaacs Harbor quartz has hitherto given the richest yield, being 1 dwt. 21 3-10 grains per 100 pounds. The gold districts, as discovered, were divided into claims 20 feet by 50 feet, or 1,000 square feet, the rent being $2 per claim, but the lessee is bound to perform 100 days' labor on his claim, and to pay 3 per cent. royalty on the gold found. The smallest claim now, however, is 150 feet across and 250 feet along the supposed lead. The quartz varies very considerably—the most crystallized presents the purest gold—the semi-opaque shows the gold in irregular veins or nodes, and the blue quartz is thoroughly impregnated with the metal, but in such minute portions as to be almost indiscernable until the stone is wetted. The quartz is usually roasted in kilns, or in holes in the earth, over which logs are piled and burned. It is then put under the stamps. The mills are of two kinds—one crushing, the other stamping. They work night and day. When steam is employed, from 1 to 8 tons per day are crushed, and three to eight hundred weight when water power is used. The tailings, after having passed through the amalgamator, are usually still rich in gold, and have been made to yield as much as the virgin rock. The men preferred as miners are unskilled laborers. The average pay is $1 per day of 10 hours. The men pay from two and a half to three dollars per week for their board. For a single man or party of men who take a claim, $100 (being subsistence for three months) and the requisite tools are all that is required. The charge for crushing at the mill is $3 to $4 per ton, "and it were hard indeed if the result of three months work did not yield sufficient to pay for the next three months' current expenses." For larger ventures, the following is an estimate of capital required:

Six No. 1 Gov. mining areas, at $2	$ 12
Crushing mill	3,500
Fuel and other stores	3,000
One engineer	1,000
One amalgamator	1,000
Eight miners, at $312 per annum	2,496
Four boys and carters, at $250	1,000
Contingencies	2,992
Total	$15,000

This is the least sum with which a company should start; for, although the produce of the mines always finds a ready market, it may not always be advisable, or even practicable, to crush during the summer droughts. Of the capital actually employed, 75 per cent. is invested by natives of the United States, twenty per cent. by Europeans, and five per cent by the Colonists, and the following table exhibits the result of their operations:

	Average daily weight of quartz raised	Average daily number of men employed	Average yield per 100 lbs. quartz	Average yield per man	Total yield for past four years
	cwts.qrs.	cwts.qrs.			
Waverley	229.8..	224.9..0	18.4..1	18.2..	24,701 oz.
Sherbrooke	173.8..	87.6..1	6.7..2	5.5..	12,171 "
Wine Harbor	274.4..	73.0..0	22.4..2	13.6..	11,639 "
Isaacs Harbor	65.8..	63.0..1	21.3..1	7.4..	5,151 "
Oldham	126.3..	69.3..0	17.9..0	23.0..	4,151 "
Renfrew	110.9..	47.1..1	3.1..1	2.7..	3,274 "
Tangier	59.3..	84.9..0	22.1..0	11.8..	2,611 "
Montagu (3 yrs. only)	41.1..	66.9..1	18.9..0	17.8..	2,322 "
The Ovens " "	39.6..	12.2..0	13.0..0	18.6..	442 "
Unclassified " "	42.1..	7.9..0	13.1..0	9.8..	148 "
Laurencetown (2 yrs. only)	95.1..	5.0..0	22.6..0	21.5..	139 "
			Mean 0	22 8..1	11.8.. 66.749 oz.

Thus the yield during the past four years for all the gold diggings collectively is 66,749 ounces. This represents accurately the quantity obtained from the crushed ore; but 20 per cent. must be added to include the gold picked out of the good specimens before the ore is sent to to the mill.

Newfoundland.

A correspondent writes from Newfoundland, July 11: "This island abounds in minerals, but as yet the working of the claims is in truly verdant infancy. The Union mine is the only one being worked with vigor, and yields twelve per cent. of copper. The shipments from it so far this season reach 800 tons, but the proprietors expect to ship 2,000 tons this year. There is another mine at Little Bay, which has been worked seven years, and produces ore containing 50 per cent. sulphur and only three to four per cent. copper. It is not extensively worked at present, but the lessees are about to extend their operations, expecting, as they descend, that the quality of the ore will improve. Beside these several copper lodes of great richness have been discovered, and work commenced. Of these, some have been since abandoned, while others have been since abandoned, while others promise much success. Private capital alone has been employed, and no companies formed yet. A lead mine opened at La Manche, produced a large quantity of good rich ore. It was commenced by a company who were in some degree connected with the promoters of the electric telegraph, and yet, although a very rich metal, and yielding largely, it does not appear to have been a success. This merely indicates that the management was faulty, and persons well qualified to judge are of opinion that there is an immense amount of metal there, and that it would yield a handsome return for capital judiciously expended upon it. At Lawn there is another lead mine from which valuable ore has been extracted. The operations connected with it are as yet, however, in their infancy, and it would be premature to say much more with respect to its probable future. Harbor Mille, in Fortune Bay, was lucky enough to have, a few years since, a valuable vein of silver; the working of which, however, was abandoned for want of capital and energy on the part of the parties interested. It will, no doubt, at a future day, when the knowledge of mining and the spirit of enterprise become more general, be resumed. From all parts of the island samples of copper, and from almost every direction, specimens of good lead are obtained, but until some capital is brought to bear, and some new life is infused, the progress of development will be slow, and the most valuable deposits will remain unproductive. Coal has been discovered in several places about Bay St. George, but no attempt has hitherto been made to work it; yet I am assured that in St. Johns, coal is seldom or never sold under twenty-five shillings, currency, per ton. Plumbago has been found in several quarters, and lately some attention has been paid to it, but nothing of importance has been done regarding it. Valuable marbles abound on the northern portion of the island, and last year a few men were employed in opening a quarry, which is still being prosecuted, but the operation is one on the most limited scale. So much for the minerals of Newfoundland, which, despite their known richness, only employ about one thousand men, a fact which does not redound to the credit of the many wealthy residents on the island, and the many more, who, having made fortunes in it and retired from it, will not invest a share of their winnings in properties which would enrich them, while they would afford a permanent source of employment to the poorer portion of the community.

Mexico.

Mining in Northwestern Mexico appears to be at a standstill. In Sonora, says a correspondent of the *Herald*, all is confusion and violence. Business of all kinds has ceased. Mining cannot be carried on, and the miners are all returning to San Francisco, leaving works which have cost immense sums—the property of Americans—utterly unprotected and going to swift destruction. The French impress everything, and give only abuse and insult when remonstrated with by Americans. No respect is shown to anybody, and there is no safety for life or property. . . . . From Sinalva we learn that the French still hold Mazatlan, but are besieged by some 3,000 soldiers under Corona. We hear of no mining going on there. . . . . As to Lower California, the entire peninsular is in the hands of the Juarists. Official notice had been given by the agent in San Francisco of the "Mexican Empire," that all the Mexican ports on the Pacific, save Guaymas, Mazatlan, San Blas, Manzanillo, and Acapulco, are closed to foreign commerce. And says a correspondent: "As this paper

blockade is enforced by not a single war vessel, it is of course treated with perfect contempt, as it deserves, and goods can be cleared from San Francisco any day for either of the ports named as closed. It is simply an attack upon American mining interests in that quarter, in revenge for the open sympathy manifested by all Americans for the liberals. We have still a few mining companies working there under every disadvantage, and the "Agent of the Mexican empire" gives a last kick at us in the manner stated. His kicking days are nearly over."

New Zealand.

The latest advices from New Zealand by steamer to Panama, are to June 26th. They state that none but satisfactory accounts come to hand from the northern settlements. Mr. Walton is opening the coal mines at Wangarei, and coal is now among our articles of domestic produce. On the West Coast the trade between Onehunga and Kaipara is increasing so fast that two additional coasters are being laid on as regular traders. From the various settlements along the coast, gum, flax, and agricultural produce come more freely forward than for several years past. In short, our domestic trade has revived very much since the cessation of hostilities. The energies of the settlers are being directed into the proper channel, and with continued peace their efforts will soon tell. Coromandel still yields steady returns of gold. We believe, if deep sinking were resorted to, the district would turn out very similar in its gold returns to Ballara; but as this requires large capital and great perseverance, we don't expect to see it adopted for some time to come. The Kapanga Quartz Company has paid seventy per cent. within eighteen months, and left a balance in hand to pay for new machinery. In the preparation of flax machinery great progress has been made by Messrs. Fraser and Tinne. A portable hand machine has been constructed by them, which will prepare green flax or boiled, quite as fine as the Maori scraped flax. This brings the industry to the door of every settler.

Oil Summary.

Pennsylvania.

We still hear of frequent "strikes" in the oil regions of Pennsylvania, but people seem for the present to have lost all interest in oil news. Hence we curtail it. . . . A letter from Oildom to a daily contemporary says: The present figures for "crude" at the wells vary from $2 26 to $3 26, according to the locality and gravity of the oil. At these rates wells which only yield a small or even average amount, cease to be profitable, and this must necessarily check the boring of new wells which are not already commenced or contracted for. Experience has shown that all wells exhaust themselves in time. The conclusion, then, is plain, that when the wells which now produce largely shall have become "dry holes" petroleum will be left to lubricate the machinery of nature, instead of continuing an auxiliary of Yankee invention and patent right. This result will not be brought about, however, without a fierce struggle on the part of producers and almost criminal negligence on the part of capitalists. The greater part of the supply at present comes from men whose pockets contain a healthy roll of greenbacks, and who are willing to use the last "stamp" rather than give up their hopes of large fortunes as the legitimate result of their hazardous labor. The pretty absurdity of plugging up the wells is, of course, not thought of by experienced oil men, as that has been thoroughly tested in days gone by, and invariably resulted in stopping the supply with a vengeance, and it is now universally acknowledged that oil having once commenced to flow, will continue to do so, if not in one direction then in another. A more practical method than this has been found, and is being put in operation, in the shape of large iron tanks capable of containing many hundreds and even thousands of barrels, into which the oil is allowed to run through iron pipes, until full, when they are hermetically sealed to await a rise in the market. I would suggest, in this connection, that large excavations in the ground, lined with cement, would be less expensive, and when closed less liable to accident by fire or other outside influences. There is no disguising the fact, however, that the ultimate fate of petroleum rests with our capitalists. Scientific experiments have shown conclusively that in the manufacture of gas and caloric it may be used to the greatest advantage, even at three times its present value. It is not in the power of the producer to create this new demand which alone can make his labor valuable, in the event of closing permamently the European market. If the demand becomes limited it is evident that sooner or later he must sell, and if his margin be too small, as it must be, nothing remains but to retire from the field. The remedy lies in engaging the capitalist to work in harmony with the producer, and thus reap a mutual harvest, instead of allowing a temporary cause to effect the permanent abandonment of one of our most valuable productions.

Illinois.

The oil ravines of Zuma are thus described by the editor of the Davenport (Iowa) *Democrat:* "We first visited the place of Wm. McCall, and there, in a ravine, pulled off coats, rolled up sleeves, tucked pants under boot tops, and explored the ravine near the house. Tin pans, skimmers, tunnels and bottles were produced, and plenty of crude petroleum gathered from the surface of the water oozing from the ground. A lighting rod was sunk from 8 to 10 feet, to the rock, and petroleum bubbled up as it was withdrawn. Put your hand in the water, and your hand is covered with oil; and your hand is as greasy as you can make it; smell of it and your olfactories are filled with a strong stench of petroleum; saturate paper with it, and light it with a match and it blazes with all the fury of turpentine, and fills the air with a stench of petroleum; run your hand and arm down anywhere and bring up mud from the lowest point you can reach, and it smells of petroleum—in fact you can't touch anything in that ravine without getting greased and perfumed with petroleum. for it is there, all through and through, and most unmistakably.

Kentucky.

A letter from Burksville says: The despondency of last spring about this Kentucky oil region, is fast passing away. Several small strikes have been made, and in every case petroleum of excellent quality has been found. The refiners report a result of fully 90 per cent. burning oil, at a fire test of 126º. But the New York and Burksville Company have just met a "great success." They put a well down, just above the old Gilreath, with a spring-pole. At forty-seven feet they made a strike which on applying the pumps, was found to yield between ten and twelve barrels per hour. If this continues they have a good 250-barrel well—gravity about 20º; said to be entirely inodorous.

Virginia.

The Parkersburg *Times* states that the Marietta and Gale's Fork Lubricating Oil Company, are now shipping the best quality of lubricating oil from their well.

Tennessee.

The Tennessee wells, on the Obey river and vicinity, are progressing favorably, getting some oil, and preparing for complete testing.

Banca vs. British Tin.

The depressed state of the tin trade appears to have caused many tin miners in England to cease work altogether. We see from correspondence in the London *Mining Journal*, that there are from sixty to seventy steam engines for sale at the mines in Cornwall, while many others are expected to follow. The tin miners there talk of a commission to be sent out to inquire how far and how long the Banca tin is likely to compete with them, in order to make sure whether it is worth while to go to more expense upon their own mines. A geological survey of Banca has been completed, continues the writer, and the area of the tin-producing districts ascertained. The actual presence of tin is ascertained by boring, which, it will be observed, is a step in advance of the obsolete modes to which our Cornish streamers adhere with so much pertinacity. After this the woods are felled, and the removal of the alluvial deposit commences. The tin is generally found lying on the surface of the granite rock, but on it is well ascertained that the richer deposits of tin are already exhausted. The laborers employed are principally Chinese emigrants, who work the ground on a kind of tribute system, receiving from the Government a certain price for all the tin they can raise; the curious part of the business being, that each gang of Chinese smelt their own tin, so that it is rendered by them as white tin, and not oxide of tin, as is the case in Cornwall, but in other respects the resemblance to the Cornish tribute is more perfect. Subsistence is literally advanced to the Chinese in the shape of rice and other necessaries, and it frequently happens that the yield of tin is not sufficient to repay the advances. There is no stamping required, neither are there generally streams of water to drive stamping-mills, even if they were wanted. The tin is smelted by wood fuel, and the slags contain so little tin that the Dutch officials consider that they are not worth taking any further notice of, a fact in itself which says much for the industry and shrewdness of the amateur smelter, and dispels much of the mystery connected with tin smelting in any country. The great increase of late years in the yield of tin seems to be owing to the introduction of Chinese in large numbers, who are much more industrious than the natives of these islands, and the great stimulus received from the continued high prices of the metal. It is satisfactory to know that, although the strictest search has been made by the Dutch engineers, they have not yet succeeded in discovering any lodes worth working, the veins they have found being both small and poor; and that even if lodes should be discovered, they must be very productive to repay the cost of regular mining. Steam-power would have to be used for all purposes, and a class of artizans and miners sent from Europe to carry out the operations. In countries where there are no roads, and scarcely any facilities for mining, coupled with a climate which few European constitutions can stand, the difficulties of mining for a metal like tin, which requires so many processes to go through before it becomes a marketable commodity, can only be appreciated by those who know what foreign mining really means.

Pacific Railroad Report.

The following is extracted from a report made by Mr. Springer Harbaugh, Government director of the Union Pacific Railroad, to Hon. James Harlan, Secretary of the Interior, dated Pittsburgh, May 17, 1866: "I confidently believe that the first one hundred miles will be completed by the 1st of June, whereby the act of incorporation will be fully complied with. The grading of the second one hundred miles can, and I think will, be completed by the 15th of June. A corps of engineers has been sent out to definitely locate the third one hundred miles. . . . . It has been assumed that the tonnage westward will be largely in excess of the tonnage eastward. This theory, I am convinced, will not be practically sustained after the great through line is fairly opened for business and in successful operation. The cheap iron ores of Lake Superior, costing at the mines $3 50 per gross ton, are transported by rail to the Lake; thence by water, say 600 miles, and by rail, say 200 miles, costing on an average $10 per ton, including everything at points for extracting and working the same—feeding a great number of blast furnaces and yielding 66½ per cent. of pure pig iron, worth at this time say $42 per ton, and supplying more than one-half of the metal consumed by all the rolling mills of north-eastern Ohio and western Pennsylvania. All of this trade has been created since 1858 or 1859. I am informed that the copper mines of New Mexico are now being successfully worked. The ores are smelted—the cost of mining and smelting being about 5 cents per lb. The copper is taken to Guayamas, Sonora, a distance of 500 miles of land carriage, at a cost of 7 cents per pound; thence to our eastern sea-board, or to Europe, at a cost of one cent per pound—thus making the actual cost of the refined copper at the consuming points about 13 cents per pound, while the net cost of the Lake Superior refined copper, delivered at Pittsburg or New York, will now average from 22 to 24 cents per pound. I am also informed that silver ore is being transported by wagons from Nevada to San Francisco, a distance of about 250 miles, and thence is shipped to England for smelting. It is, therefore, no great stretch of imagination to believe that the tonnage of this great natural highway will at no distant day consist largely of the precious ores (including copper) from the mineral districts of our Western States and territories to the Eastern States, where cheap fuel, cheap labor and improved machinery will be used for their smelting and refining.

Original Papers.

[WRITTEN FOR THE JOURNAL OF MINING.]

SALT—Number Eleven.

By FRANCIS E ENGELHARDT, Ph. Dr., Professor of Chemistry in St. Francis Xavier's College.

The brine, as it comes from the wells, is rarely passed into the vessels for evaporation, but is usually allowed first to settle. The settling of the brine has for its object the precipitation, or separation, of the impurities mechanically held in suspension therein, consisting of iron, (which is almost always found in small quantities in the brine, and is kept in solution by the carbonic acid with which the brine is impregnated,) together with chloride of magnesium, carbonate of lime, sulphate of soda, and magnesia, which may also be present. The brine is pumped therefore into wooden tanks of such size as circumstances demand, where, when exposed to the atmosphere during a sufficient length of time, it parts with the entire acid, and consequently with all the iron kept in solution by it. But since the time required for this operation is, in most cases, deemed too long, the salt manufacturer is apt to use some artificial means for the purpose of accelerating this process, especially by using slacked lime, alum or clay. The quantities of these substances employed are very small, and it is only necessary to mix them thoroughly with the brine when, in a few hours, the latter is ready for use. The use of lime in settling the brine is held by some to be more injurious than advantageous, since some brines contain not only sulphate of magnesia, which is decomposed by the addition of lime into sulphate of lime (gypsum) and magnesia, the latter causing the iron to precipitate, but also more frequently into chloride of magnesium. If now an excess of lime be added, that is to say, if more lime be added than can combine with the sulphuric acid of the magnesia (potash soda) in the brine, this excess of lime will produce a decomposition of the chloride of magnesia, which falls down, and the chloride of calcium—which remains in solution—makes the salt manufactured of such brine to deliquesce in the atmosphere. But the chloride of magnesium, if not thus decomposed, will remain in the brine, and consequently come into the salt, where it produces the same effect as chloride of calcium. A judicious use of lime, therefore can be of no injury to the salt, since it deprives the brine of its sulphate of magnesia, etc. The usual quantity employed, is one quart of lime to the quantity of brine requisite for producing one hundred bushels of salt. The State of New York passed a law some years ago, forbidding the use of more than two quarts of lime to the brine used in each salt works in twenty-four hours; that is to say, to each quantity of brine capable of producing two hundred and eighty, to three hundred bushels of salt. The addition of alum to

brine, produces not alone a decomposition of the chloride of magnesium, but also of the chloride of calcium, if the latter be present in the brine; and, moreover, it brings chloride of potassium and aluminium into the brine, and leaves the sulphates (magnesia, potash, soda,) untouched. I am not, however, prepared to argue here whether the chlorides of potassium and aluminium that are formed by the addition of the alum and the soluble sulphates that remain, are less injurious to the salt manufactured from the brine containing them, than the chloride of calcium or magnesium. A small quantity of clay has been tried in various countries at different times, and is reported to act advantageously. The evaporation of the brine thus prepared is a very important question for the salt manufacturer, since his object must always be to manufacture the best article at the least expense for fuel, time and labor. There are two methods of evaporating the brine in common use. The newer one is by means of large iron pans, as practiced in England and on the continent. The Cheshire* pans are from thirty to eighty feet long, twenty feet wide, and from sixteen to twenty inches deep, and made of one-quarter to three-eight inch boiler iron. The pans are so set in bricks that their edges rest on the brick-work, and the middle of the pan is usually supported lengthwise by thin brick walls. The French and Dutch pans are supported by short iron columns, distributed under the pans at equal distances from each other. Some of the English pans are heated with several fires, sometimes as many as four, each of them consuming daily a ton of coal, while others have only one fire. In the English salt works, the cheapest kind of coal is used, costing about $1.32. to $1.54 per ton, of which one thousand two hundred pounds is consumed in producing one ton of salt. In some salt works the pan is connected with several wooden vats on one of its sides, with a so-called circulator, a mechanical contrivance, which keeps the brine in constant motion, and forces it through these vats, where most of the gypsum settles and is at certain times removed. To produce a fine grained salt in the pans, the English manufacturers employ small quantities of soap, rosin, butter, or any other fatty substance which prevents the salt from crystallizing. If it should be necessary to clear the brine in the pans before evaporation, a solution of glue or calves-foot jelly is added, when the brine approaches the boiling point; and when boiled a short time, the impurities are taken off with the scum. In the manufacture of coarse salt, alum is employed, one pound being used to from one to six tons of salt. The English manufacturers make usually four kinds of salt: the so-called butter salt, which is made by heating the brine to boiling point: the common salt, made by a temperature ranging between 140 to 180°: the fishing and rough salts, between 100 to 140°; and the bay salt, between 100 and 110° Fahrenheit. When the butter salt is packed into wooden moulds and allowed to drain until sufficiently dry to handle, and then placed in a heated room or "stove" and dried, it is called stove salt. The larger pans are generally subdivided into several compartments, since it is impossible to boil brine in pans longer than forty feet; in the first division, butter salt is prepared; in the next, common salt; and so on. Butter salt is drawn out of the pans three to four times a day; common salt three to six times a week; rough salt, once a week; and the coarsest fishery and bay salt, once in ten to fourteen days. The weight of these varieties of salt, for a measured bushel, is between 45 and 70 lbs. The scales that form themselves at the bottom of the pan, consist mostly of sulphate of lime, and become about one inch thick in the butter salt pans, during a week, and are cleaned off every Monday. In the pans, where a lower temperature is used, the scales are not removed so frequently. A good pan yields daily six tons of butter salt, and fourteen to twenty tons of the other varieties. The butter salt requires the greatest amount of coal. There are ninety-seven salt works in England employing about 3,000 men. The capital invested is £1,000,000 sterling. The evaporation surface of the pans amounts to 1,000,000 square feet. In France, at Dieuze, department Le Meurthe, the finest salt is made at 180° Fahrenheit and is drawn every day; the medium salt is made at 160° and drawn at once after two days; and the coarse salt salt at 140°, [adding alum,] and drawn once in four days.

204	lbs.	coarse salt	require	88	lbs. of coal.
204	"	medium	"	85	" "
204	"	finest		82	" "

* Most of the following facts in regard to the evaporation of brine in pans, as practiced in Europe, are taken from Prof. George H. Cook's report to the Legislature, Albany, March, 22, 1853.

[WRITTEN FOR THE JOURNAL OF MINING.]

LEAD FIELDS OF THE UPPER MISSISSIPPI—No. Seven.

HOW LEAD ORE IS MINED.

By J. VANCLEVE PHILLIPS, M.E.

PEDLER'S CREEK.

We will now look at the lead diggings forty-five miles north-east of the village now called Linden, formerly known as Pedler's Creek, from the fact of a wandering Israelite, in 1830, having found gravel or surface lead ore at this point and reported it to miners, who flocked in and discovered what was known as the "Pedler's Creek Range." We will glance at the topography of this district first—eight miles N.W. of Mineral Point and fifty miles from Galena. The country is composed of small prairies, a succession of limestone ridges, and district drained by the head waters of the Pecatonica River, clear springs breaking out of bluffs of limestone and following denuded valleys over rock and gravelly bottoms; the creeks, flanked by a kind of low bluffs or terraces, being the termination of ridges; the ridges serpentine, and covered with deep clay, rounded off as done by the hand of art. Near the head of one of these creeks the arms or small branches of one of these ridges terminate in a north and south course, being intersected or divided by small ravines that terminate a few hundred yards distant, against a dividing ridge. Across the end of these little ridges, in an east and west course, is worked the ore known as the "Pedler's Creek Range." The length is 2,500 feet—as much as 20,000,000 pounds of ore have been mined—the deepest sink down not being one hundred feet. The ore was of the same general richness as all the other ores named, and yielded 70 per cent. lead. The sandstone spoken of as being at the base of the lead measures, crops out along the creeks in this vicinity, and has a slight tilt back towards the centre of the ridges; the lead measures are not all *in place* in this district. The ore made in part in the upper Galena limestone, lower Galena, and blue limestone. After the ore had been mined for ten years in the upper rocks in the form of broken, gash, stratified and pipe veins, and the place been partly abandoned, a miner living in a small cabin by a spring in one of the vallies at the west end of the range, concluded he would clean out his spring and build a rude spring house, at the depth of two or three feet from the surface. In the bed of the spring was discovered a stratified vein of lead ore mixed with the sulphuret of zinc, this was thirty feet wide, and one foot thick, solid ore. Being there just after the shelving limestone, that formed the cap rock had been removed, so as to strip the vein for ten feet ahead, an exposure of a true stratified vein was seen. As much as five tons per day of ore could be mined from this vein by the labor of six miners; at that time lead ore was thirty dollars per ton, and zinc ore of no value, and considered by the miner as a great detriment to the lead. This was the continuation of the Pedler's Creek vein, going west; what was done at this mine after that time, I am not informed. Recently, a large zinc furnace has been erected at Mineral Point for the purpose of reducing the sulphuret, or "black jack," ores to spelter, and these kind of veins will be valuable. Aside from this range, numerous other smaller mines have been opened near, some in the blue limestone, some in the lower, and upper Galena. The supposition is that these ores are the out-crop of a great lead field, where the lead measures are all in place, and may be traced to these undeveloped districts.

DIAMOND GROVE.

Five miles east of Pedler's Creek is Diamond Grove, a belt of oak, hickory and quaking asp woods, some three miles wide. This belt follows a divide between the head waters of the Pecatonica. In several places mines have been opened in the upper Galena limestone and gash veins worked; the centre of the ridge being a high flat table land. At a depth of fifty feet some surface water came in and the ores were abandoned, except in some few places where one horse power pumps were put up, and the ores followed a little deeper. There is a large field of the upper Galena limestone not yet developed here, and a good opening for miners with moderate capital, to prospect and work mines. The veins are E. and W. and N. and S.

LOST GROVE.

At the south end of the last named is Lost Grove, a spot of oak woods surrounded by prairie. In 1845 ores were first discovered at this place. The locality of the principal diggings is on the high grounds, centrally between the creeks, and covering about eighty acres of land. The ores made in the upper Galena limestone in places from the grass roots down to one hundred feet deep—forming, in north and south, and east and west, pipe and gash veins, in openings in the limestone; but little work has been done here since 1850. The ore went into the water in a few places. One horse power pumps were put up, and at a depth of fifty feet in the valleys and one hundred feet on the ridges, the ores were abandoned.

BLUE MOUND.

In the extreme northeast corner of the lead field is the conic hill known as the "Blue Mound." This rises up 1000 feet above the Mississippi river at Galena, which is sixty miles distant and in the south part of the lead field. The Blue Mound is formed of Niagara limestone and rises three hundred feet above the adjacent country, which is prairie and timber. This mound is the centre of a ridge system. The ridges from the foot of the mound branching out towards the Wisconsin river on the north and the head waters of the Pecatonica river on the south. The lead mines are south one mile from the mound. The ores occur in a system of parallel east and west pipe and gash veins. The ores were discovered here first in the grass roots about 1830, and worked for some years following, several million pounds of ore having been raised. But little work has been done here for the last twenty years.

FLINT HILL.

Six miles south-west of Dubuque are seen the lead diggings, known as "Flint Hill Diggings." The district is two miles west of the Mississippi river, and takes its name from the conic hill known by that name. This is a mound formed of the Niagara limestone, and has many features in common with the Blue and Sinawa Mounds; differing, however, in this particular, that while they stand isolated in the lead field, being outliers of the Niagara limestone, Flint Hill is partly attached to the table lands and forms part of the western boundary of the lead field. The study of the form of the lead ore at these two remote points, and comparing it with the ore found in the more central parts of the lead field, is interesting, and facts of great practical importance in the economical geology of the district are eliminated—while the lead ore on the border and in the central part of the lead field yields the same amount of lead in the furnace, yet the outline of the masses of ore differ materially as follows: True east and west veins always have the most perfect cubic-formed ore. North and south veins have the edges of the cubes *truncated*. The stratified veins along the border of the lead field have the solid angles of the cubes truncated. This law is so well defined that a good observer can go to a lead furnace where there are a hundred tons of ore from various diggings thrown in a pile, and can pick out and identify each mass of ore to the vein and district from which it has been mined. At Guttenberg the solid angles were truncated down to a point. This place is on the extreme border of the lead field. At Flint Hill the angles are less truncated. This place is also on the border of the lead field, yet not so far removed from the great east and west lead districts such as Dubuque, and consequently the ore retains more of the form of the east and west veins. The ores occur here in East and West gash veins—as much as one million of pounds of ore have been mined from one crevice. Some twenty crevices are discerned and have been worked the last four years by individual miners. The country is very broken; the ore in dry ground. There is a field of lead measures adjoining the mines where the measures are *in place*, and upper Galena limestone capped with rock and shale, and evidence of a rich undeveloped lead district that will bear east and west gash veins,

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GEORGE FRANCIS DAWSON,
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MINING REDUCED TO A CERTAINTY—REMARKABLE RESULTS.

To render mining a thoroughly legitimate business should be the aim of every man who loves this great country, because the greatest source of wealth therein is undoubtedly its mines—whether of gold or silver, copper or iron, coal or petroleum. This has long been our ambition, and will continue so to be, until attained. How to reach it then? We all know—although too many act as if they were ignorant of the fact—that economy of labor as well as of capital, in the mine, in the mill, and on the road from the mine to the mill, are absolutely essential to that perfection in the acquisition of results which will rest satisfied with itself. But mining economics do not appear to be so well understood in this as in other countries. Australia, for instance, where, according to Mr. Hopkins, a distinguished mine-engineer, the Black Hill Company, on the banks of the Yandzie, with a paid-up capital of £24,000, (say $120,000, coin,) with quartz averaging less than 3 dwt., (say $2 25, coin,) per ton, makes it pay 30 per cent. per annum on that capital! This seems almost incredible, but it appears that this same company, have even obtained a satisfactory profit from quartz giving the very low average of 2 dwt., (say $1 50, coin,) of gold to the ton; and the new Perseverance Co-operating Company, at work on White Horse Flat, are stated to be content with 1½ dwt. (say $1 12½, coin,) per ton! The great importance of Mr. Hill's statement, which bears the imprint of truth upon its face, induces us to give his description of how things are managed at the foot of the Black Hill, on the banks of the Yandzie. He says:

"The visitor will find there the most complete and novel plant in the colony. The engine is a horizontal one of 100-horse power, and is placed in the centre of the stamp-house and drives six batteries of ten stamps each. The weight of stamps being seven hundred pounds, they are worked by wrought-iron discs with steel faces and steel cams. The litters are turned and revolve in anti-friction metal guides. The quartz is applied to the batteries by a self-feeding apparatus, requiring the attention of one man only to the sixty stamps, and is reduced sufficiently fine to pass through wire gratings at the back and front of the stamp-boxes, having one hundred and twenty holes to the square inch. A small quantity of quicksilver is put into each stamp-box twice a day. The crushed ore is carried through the gratings by water into riffle boxes containing mercury extending from both sides of the battery, and then along some twenty-four feet of blanketing. These blankets are washed every eight hours in tanks which move on wheels, and the material collected by this process is conveyed into revolving barrels with half its weight of mercury, and water sufficient for its perfect amalgamation. The mine consists of the principal portion of the Black Hill, and contains about 60ty acres. Tunnels 9x7½ have been made into the hill at different levels, amounting in length to about 2 590 feet. These tunnels are connected at several points with the open workings at the top of the hill by shafts, down which the quartz and mullock are shot—the quartz being conveyed to the mill in tanks, by iron railway, and the mullock carried to the waste heap. The average width of the quartz lode is about ninety feet, with numerous leads running into it. The quantity of quartz crushed per week is about 1.000 tons, and the yield of gold for the three months preceding my visit was two dwt. per ton. When the crushing stuff is soft, casings, however, from 1.500 to 1.700 tons can be got through—the average 1.500 tons. Cost for mining per ton, 4s.; and for crushing, 2s. 6d. The number of men employed is ninety; and of horses, four; of firewood there is used per week one hundred and fifty tons. The company have erected a small iron foundry, at which they cast the stamp-heads and other iron required, and the average amount of iron to be renewed is about one ton weekly. The supply of water is obtained from the Yanovie creek, and is stored in reservoirs holding 150,000 gallons. A well, supplied from the reservoir, is sunk in the stamp-house, and from thence the water is forced by two pumps (thirteen inches in diameter, throwing five hundred gallons per minute) into a large tank on the side of the hill, holding five thousand gallons, and from that point distributed by pipes to all parts of the establishment."

"What has been done here," he adds, "can be done elsewhere now that it has been shown how to do it." True; but unfortunately it is not done elsewhere. What gold company in the United States works quartz that holds less than $6 or $8 to the ton? and even then the rock must be decomposed or it will not pay. Truly we have much to learn from our Australian cousins, if they can do these things, and it is certainly incumbent upon the Government to send thither a competent person to ascertain the truth and give us the advantage of his knowledge; for if this statement is true, there will be scarcely one of the millions of auriferous veins that traverse the Western States and Territories that cannot be worked with an absolute certainty of paying immensely. Nor is it from the mining and reduction of auriferous ores alone, in foreign countries, that we may learn if we take heed. Argentiferous ores of slight worth are made to pay in Europe and in Mexico. In the latter country we well remember to have heard of a silver mine in Durango or Chihuahua, the ores of which paid not more than $17 per ton. Machinery to the value of $1,000,000 had been set up at the mine by an English company, but owing to extravagance they failed. Some other parties bought the mine and works for $60,000, and have ever since been making money out of it, unless the war has stopped the work. Now, what Nevada company can equal this? Lodes that do not pay more than thirty dollars in silver are considered worthless by most miners and mill-men unless buoyed up by the hope that they will become richer in the ratio of depth. Now, if a thing can be done anywhere, why cannot it be done in the United States? Are Australia and Chihuahua better situated with regard to freights? Are not the prices of labor in Australia and our Western mining regions nearly equal? Why, then, should there be so great a difference in mill and mining results? This is a momentous question, and one that our Government should take up. We commend it to the Secretary of the Treasury, who has at his command a fund of $15.000 with which to gather statistics of the mineral resources of our Pacific States and Territories, because such statistics will be infinitely more valuable when comparative. With such information, the eyes of the President and Congress will be opened to the advisability of sending commissions to every foreign mining country of note, to ascertain and faithfully describe the methods of working mines and their ores, with costs of such working; the reports of all such commissions to be afterwards condensed by one practical mind into a volume, comparing costs, results, etc., in such countries with those in our own. Such a work, pregnant with facts and figures, would be apt to startle many in the United States who now turn up their noses at what they call "poor rock." Such a work would do more to bring mining operations down to a legitimate business basis than anything else of which we can think.

THE SUB-ATLANTIC CABLE.

After an expenditure of about $3,000,000 the persevering Cyrus W. Field and his coadjutors have succeeded at last, after many failures, in successfully laying a submarine telegraph cable between America and Europe, which is declared to work "splendidly." European news, scarce a day and a half old, has already been published in the New York dailies, and when the proposed cable shall be laid across St. Paul's channel, from Newfoundland to Cape Breton, and the English telegraph system shall be in connection with Valentia Bay, we presume that messages will be received in New York as soon as, or sooner than, they are sent. The difference of time between London and New York is about 4 hrs. 40 min. With the two cities in absolutely perfect telegraphic connection, dispatches between them should be almost instantaneous. Hence dispatches from New York to London will appear to have been nearly five hours on the road, while messages from London hither will arrive *nearly five hours before they were sent.* In the race westward the sun has little or no chance with the electric fluid. Mr. Field and those who have never failed him, are entitled to the thanks of the civilized world for their great achievement. They are already making money at a great rate. Within twelve hours 4,000 words were dispatched, which at $5 coin per word (the price charged) yielded $20,000. We presume there is no reason to doubt that the cable can and will be worked day and night. This would present a yield of $40,000 per day and in seventy-five days—two months and a half—mount up to $3,000,000 in coin, which would reimburse the company, for the entire expenditure of all the Sub-Atlantic Cables. Once arrived at this point, we shall expect to see a very great diminution in the prices, but until the company is reimbursed for its outlay we think them justified in their present rates, on account of past, present and future risks.

Congressional Mine Legislation.

The following is a list of the various measures bearing directly or indirectly upon the mining interests of this country, passed at the last session of Congress, in the order of their approval by the President:

29. S. 80.—A resolution extending the time for the completion of the Union Pacific Railway. Approved May 7, 1866.

30. H. R. 127.—Joint resolution to provide for the exemption of crude petroleum from internal tax or duty, and for other purposes. Approved may 9, 1866.

34. S. 61.—A resolution to extend the time for the construction of the first section of the Western Pacific Railroad. Approved May 21, 1866.

90. S. 317.—An act to amend an act entitled "An act to amend an act entitled 'An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific ocean, and to secure to the Government the use of the same for postal,

military, and other purposes,' approved July 1, 1862." Approved July 2, 1864. Approved July 3, 1866.

91, S. 219.—An act granting certain lands to the State of Michigan, to aid in the construction of a ship canal to connect the waters of Lake Superior with the lake known as Lac La Belle in said State. Approved July 3, 1866.

92. S. 193.—An act granting lands to the State of Michigan, to aid in the construction of a harbor and ship canal at Portage Lake, Keweenard Point, Lake Superior in said State. Approved July 3, 1866.

93. S. 313.—An act to regulate the transportation of nitroglycerine, or Glynoin oil, and the other substance therein named. Approved July 3, 1866.

96. S. 37.—An act making a grant of lands in alternate sections to aid in the construction of and extension of the Iron Mountain Railroad from Pilot Knob, in the State of Missouri, to Helena, Arkansas. Approved July 4, 1866.

97. S. 215.—An act concerning certain lands granted to the State of Nevada. Approved July 4, 1866.

121. S. 123.—An act granting lands to aid in the construction of a railroad and telegraph line from the Central Pacific Railroad in California to Portland in Oregon. Approved July 23, 1866.

138. S. 352.—An act granting to A. Sutro the right of way, and granting other privileges to aid in the construction of a draining and exploring tunnel to the Comstock lode in the State of Nevada. Approved July 26, 1866.

139. H. R. 365.—An act granting the right of way to ditch and canal owners over the public lands in the States of California, Oregon and Nevada. Approved July 25, 1866.

The latter is what is known as the mineral land bill—published elsewhere in this issue of the JOURNAL OF MINING.

More News for Coloradians.

In a recent letter from B. S. Herrman, of Vivian & Sons' Smelting Works, to James E. Lyon, he praises the Consolidated Gregory at the expense of the Cornish mines; attack's the stamp mills, the erection of which he considers wasteful extravagance; proclaims smelting as the only practical solution of all the difficulties met with in treating Colorado ores; and declares that Mr. Lyon's Smelting Works will be complete, when dressing floors (to prepare the ores for subsequent extraction of the metals,) shall have been added. It is evident from the letter that Mr. Herrman has conceived a very favorable opinion of the Colorado ores, both as to liberality of supply and of yield.

What about it?

Last May, at the request of officers of the Smithfield Gold Mining Company, we published their statement—which at the time we had no reason to doubt—to the effect that their ores averaged from $1,000 to $1,500 per cord; but that IF they only paid at the rate of $200 per cord, they would pay a dividend of about two and one-half per cent. on the company's capital of $400,000. We are very fearful, from latest advices, that they have stumbled and fallen over that "IF." Who knows anything about the "Smithfield" or its operations? We pause for a reply.

Tunnel Between England and France.

Exploration borings are now being made at considerable expense, both near Dover and between Calais and Boulogne, towards the formation of a tunnel between England and France. During the summer other borings will be made in mid-channel, where the water is 180 feet in depth. The work is under the direction of Mr. Hawkshaw, the well known engineer. They hope to find a deep chalk stratum all the way through.

Belgian Coal and Iron Trades.

The coal and iron trades of Belgium are making great progress, which will be increased by the disputes between the British workmen and capitalists. The production of coal in the Chardru district alone in 1865, was 4,865,000 tons of which 4,300,000 tons coal and coke were exported. The production of pig iron in the same district attained in 1865 a total of 26,500 tons—the total production of Belgium being 50,000 tons.

Slavery in Europe.

A correspondent of the JOURNAL OF MINING, recently stated that up to the year 1799, the miners of Scotland were serfs or slaves, and were sold with the mine. We have since seen this statement verified by testimony given before a committee of the British House of Commons. The Russian peasantry were in the same condition until the present Emperor's reign, and many of the Swedish peasants are still serfs.

The Ancient Mines of Michigan—Who Worked Them.

An address was recently delivered by Father Jacker before the Houghton County Historical Society and Mining Institute on the Ancient Miners who have worked in Michigan in pre-historic times, from which we gather that the Rev. Father had made diligent inquiry among his Indian acquaintance respecting traditions of these miners; but all professed ignorance on the matter except John Metakosigo ("the smoker of pure tobacco") who assured him that they were Gete Wemitogo jiwag. These words really mean the "people possessed of wooden boats," but it is applied to the French and Canadians. That it can be either of these is utterly disproved by the growth of timber and the accumulation of humus in and around the "old pits," and from certain known facts I do not believe, said Father Jacker, that the Ogilwa tribe, the present occupiers of this district, date to a more distant period than the discovery of America. But those "ancient miners," who dislodged and transported unwieldy masses, which probably were not removable in the bark canoes of our present Indians, may have been another race of "people possessed of wooden boats" with whom the ancestors of our present Indians were acquainted. All I feel confident in asserting is this: that if they were expelled more than four hundred years ago, it is in vain to look for well founded traditions among the present Indian residents.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

Gardner's Rock Drill.

EDITOR JOURNAL OF MINING:

SIR:—My attention has been called to several communications which have appeared in foreign papers, respecting the Gardner Rock Drilling Machine, which was so fully described in your JOURNAL of March 31st, 1866. To one of these that recently appeared in the London *Mining Journal*—calling for further information respecting the machines thus had been given in that paper's condensation of your description—permit me to say that the advertisement of the New York Drill Company's machines appearing in every issue of the AMERICAN JOURNAL OF MINING presents the desired information. I may add that we have not yet established any foreign agencies, but it is our intention to do so. We have obtained space in the Paris Exhibition of 1867, and shall there exhibit a machine in operation. Europeans can obtain our descriptive circular by application to Wm. Jacot, Esq., care Messrs. Rathbone, Bros. & Co., London.

G. A. GARDNER,
Sec'y. N. Y. R. Drill Co.,
137 Broadway, N. Y.

MINING COMPANY REPORTS.

NEW YORK AND MONTANA MINING AND DISCOVERY CO.—CAPITAL STOCK, $1,000,000; SHARES, $10 EACH. OFFICE, 20 NASSAU STREET.

From the annual report of this company we learn that gold and silver mining property to the amount of nearly 125,000 feet of lodes, has been acquired during the past year. The machinery for a gold mill of forty stamps, sixteen arastras and twenty amalgamators has just been put up. Within two miles of this mill the company own 20,000 feet of gold lodes, many of them said to be of extraordinary richness. The mill will probably arrive in a week or so. We are informed that $300,000 cash have already been subscribed. The property comprehends lodes in the districts of Blue Wing, Bannock, Montana, Madison, Helena, Prickly Pear, Beavor Head and Hot Spring, some of which has been purchased, and a large balance discovered and located by the Discovery Corps under charge of Prof. A. K. Eaton.

DIVIDENDS.

Ocean Oil Co., 2½ per cent., payable at Philadelphia office.

MEETINGS.

Buchanan Farm Oil Co.; election of trustees August 9, noon, at 8 Broad street; Bay State Gold Co., transfer of property, August 17, noon, 90 Broadway; St. Margaret Copper Co., annual, August 6, 1 P. M., 43 Pine street; Brevoort Petroleum Co., annual, August 7, noon, 126 Maiden Lane.

Special Notice.

We are requested to call especial attention to the advertisement of the Hydraulic Works Manufactory of H. K. Worthington, in another column.

MARKET REVIEW.

FRIDAY EVENING.

The market for gold has gradually declined since our last. The price at 2:50 to-day was 147⅞. The supply of money is superabundant, the rate for call loans being 4 @ 5 per cent. There is little commercial paper offering—for best grades the rate is 6 per cent. Foreign Exchange is dull; bankers' drafts on London are quoted at 108 @ 108½; short dates, 108¾ @ 109⅛; commercial, 106½ @ 107¼. Bills on Paris at 60 days 5.25 @ 5.17½; Hamburgh 36¾ @ 37. The foreign imports into New York for the year ending June 30 was.....$306,133,398
Last year.....161,779,273

Increase.....144,354,125

EXPORTS.

Domestic produce.....$104,254,136
Foreign.....3,484,781
Specie.....45,782,430

Total.....$153,521,347

The balance of trade is chiefly made up in cotton from Southern ports.

Iron.—The metal market in general is dull. In Iron we have no transactions to note; there is in fact no demand beyond immediate requirements. Our English exchanges represent the iron market there as in an exceedingly unsatisfactory condition. Orders are slack, strikes are prevalent, especially in the North, and the high rate of discount, along with the stoppage of the Birmingham Banking Co., the bank peculiarly connected with the iron trade of that district, as well as a commencement of other failures, makes their prospects very gloomy.

Copper is firm at 31c. to 32c. but with very little business doing. There is no alteration in the English quotations, though sales are made much under smelters prices. There is, however, a better inquiry there.

Lead.—Pig has been somewhat unsteady. With the prospect of peace in Europe it settles down.

Tin.—Pig is firm, without much business; the same with tin plates.

Spelter has a downward tendency. Price 6¾c. @ 7¼c.

The following is a statement of treasure and bullion received at San Francisco during the six months ending June 30th, 1866, from the States of California and Nevada:

From Northern Mines.	Coined	$ 1,997,776	
" "	Uncoined	17,593,076	
			$19,590,952
From Southern Mines.	Coined	$ 529,176	
" "	Uncoined	1,769,208	
			$ 2,298,384
Receipts six months 1866, total			$21,889,336
" " 1865 "			25,671,792
Decrease in 1866			$ 3,782,456

	1865.	1866.
Imports of treasure	$1,065,733	$ 749,048
Coastwise receipts	2,487,482	2,362,667
Interior receipts as above	25,671,792	21,889,336
Totals	$29,225,007	$25,001,051
Total for first six months 1865		29,225,007
Decrease first six months 1866		$4,223,956

EXPORTS OF TREASURE FROM SAN FRANCISCO.

The exports and destination of Treasure for the first six months of the years 1865 and 1866, respectively, were as follows,:

TO	1865.	1866.
New York	$7,492,975	$14,956,637
England	9,750,532	3,405,810
Central America	252,645	474,128
China	3,853,825	3,744,987
Manilla	40,420	.....
Japan	8,917	100,860
Mexico	132,457	5,000
Honolula (S. I.)	12,420	82,635
Tahiti (S. I.)	5,500	.....
Chile	51,000	.....
France	.....	467,898
Vancouver Island	.....	100,000
Totals	$21,591,695	$23,338,987
Total for six months 1865		21,591,693
Increase first six month 1866		$1,747,293

The export of quicksilver from San Francisco for the first six months of this year were

Flasks	17,427
Same period in 1865	21,363
Decrease flasks	3,936

The product of the silver mines of the State of Nevada, for the half year ending June 30, exceeded $7,000,000—being at the rate of $14,000,000 per annum.

Petroleum—is in fair demand at 26@26½ for crude; 42 to 44c for refined in bond, and 59 to 61c for refined free. The export this year has been 30,100,000 galls., against 7,700,000 galls. in 1865, 15,660,000 galls. in 1864, and 19,370,000 galls. in 1863.

THE COAL TRADE.

There is little doing in coal. Liverpool orrel is quoted $16 @ 18. Cannel 18s a $20. Exports for the week, 1,264 tons

Shipments of Pittston Coal by Pennsylvania Coal Co., were as follows for week ending July 28, 1866:

By rail	15,846	
By canal	826	16,672
Previously (866) by rail	114,397	
" " canal	10,826	125,223
Total		141,895
To same date 865		305,867
Decrease		163,972

The following is a statement of coal transported on the Delaware & Hudson Canal for the week ending July 28th:

	WEEK.	SEASON.
Delaware and Hudson Canal Co.	39,528	673,658
Pennsylvania Coal Co.	826	11,652
Total tons	40,354	685,310
For the same period last year:		
Delaware and Hudson Canal Co.	14,976	392,622
Pennsylvania Coal Co.	357	18,664
Total tons	15,333	411,286

CALIFORNIA COAL.

The receipts of Coal from the Monte Diablo (Cal.) Mines for six months ending June 30th, 1866, and the same compared with a like period of 1865, were as follow :

	1865.	1866.
Number of tons	18,845	33,906
		18,845
Increased number of tons first 6 months 1866		15,061

The aggregate imports and receipts from all sources for the six months ending June 30th, 1865 and 1866, respectively, were as follow :

	1865.	1866.
Number of tons	54,109	91,186
		54,109
Increase first six months 1866		37,077

PRICES OF COAL BY THE CARGO.

AT NEW YORK, JULY 26, 1866.

Schuylkill Red Ash by Boat Load	$7 50@	$7 75
" Chestnut, " "	5 25	5 50
" White Ash Lump	7 00	7 25
" Steamboat	7 00	7 25
" Broken	7 00	7 25
" Egg	7 75	8
" Stove	7 75	8
" Chestnut	5 25	5 75
Lehigh White Ash Lump	7 75	8
" Steamboat	7 75	8
" Broken	7 75	8
" Egg	7 75	8
" Stove	7 75	8
" Chestnut	7 00	

CRANTON COAL AT ELIZABETHPORT.

Lump	$6 70@	— —
Grate	7 00	— —
Prepared	7 00	7 50
Chestnut	5 75	— —

LEHIGH COAL AT ELIZABETHPORT.

Lump	$8 00@	— —
Steamboat and Broken	7 75	— —
Egg and Stove	8 00	— —
Chestnut	7 00	7 25

AT PHILADELPHIA AUGUST 1, 1866.

Schuylkill Red Ash Prepared	$6 00@	$6 25
" Chestnut	4 25	.. ..
" White Ash Lump and Steamboat	5 75	6 00
" Broken	6 00	.. ..
" Egg and Stove	6 00	.. ..
" Chestnut	4 50	.. ..
Locust Mt. Lump, Steamboat	6 00	.. ..
" Broken	6 00	.. ..
" Prepared	6 00	6 25
" Chestnut	4 50	.. ..
Lorberry Coal	6 25	.. ..
Franklin, (Lykens Valley)	6 50	.. ..
Lehigh Lump, Steamboat and Broken	.. ..	.. ..
" Prepared	.. ..	.. ..
" Chestnut	.. ..	.. ..
Broad Top	5 75	.. ..

AT BALTIMORE JULY 25, 1866.

Wilkesbarre & Pittston W A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R A.. wholesale	7 50	7 75
" " " retail	8 50	8 75

GEORGE'S CREEK AND CUMBERLAND COAL.

Run of mine, f. o. b. at Locust Point	$5 75@	.. ..
At Georgetown	5 50	.. ..

COAL FREIGHTS

FREIGHTS FROM ELIZABETHPORT.

New York	$ 70@	— —	Portland	2 25@	— —
Fall River	1 75	— —	Newburyport	2 40	— —
Newport	1 75	— —	New London	1 10	— —
Boston	2 25	— —	Pawtucket	2 00	— —
Norwich	1 75	— —	Taunton	1 80	— —
Providence	1 75	— —	New Haven	1 30	— —
Norwalk	1 30	— —	Portsmouth	2 40	— —
Middletown	1 60	— —	New Bedford	1 80	— —
Hudson	1 10	— —	Bridgeport	1 30	— —
Lynn	2 35	— —	Hartford	1 85	— —
Salem	2 25	— —	Albany	1 15	— —

FREIGHTS FROM GEORGETOWN OR ALEXANDRIA.

To Philadelphia	$2 00	— —	Boston	3 25	— —
New York	2 75	— —			

FROM BALTIMORE

To Philadelphia	$1 75@	— —	Boston	3 25@	— —
New York	2 75	— —			

FROM PORT RICHMOND, PHILADELPHIA.

Albany (& towing)	$1 60@	— —	Neponsett	— —	@ — —
Bangor	3 00	— —	Newark	— —	— —
Bath	— —	— —	New Bedford	2 50	— —
Bedford	— —	— —	Newburyport	— —	— —
Belfast	3 00	— —	New Haven	2 25	— —
Boston	2 75	3 00	New London	2 50	— —
Bridgeport	2 30	— —	Newport	— —	— —
Cambridgeport	3 12	— —	Newport, R. I.	2 50	— —
Charleston	3 00	— —	New York	1 60	— —
Chelsea	3 00	— —	Norwalk	2 25	— —
Commercial Point	— —	— —	Norwich	2 50	— —
Cohasset Narrows	— —	— —	Parkshell	— —	— —
Davenport	— —	— —	Pawtucket, & tow'g	2 50	— —
Dighton	— —	— —	Portland	2 75	3 00
Dorchester Point	— —	— —	Portsmouth	3 25	— —
East Greenwich	— —	— —	Providence	2 50	— —
Fall River	2 50	— —	Poughkeepsie, & t'g	1 60	— —
Fredericksburg	1 75	— —	Quincy Point	3 00	— —
Gardner	— —	— —	Richmond	— —	— —
Georgetown	— —	— —	Rockport	— —	— —
Gloucester	— —	— —	Roxbury	3 25	— —
Hartford	— —	— —	Saco	3 62	— —
Hudson	1 90	— —	St. Johns (in gold)	1 25	— —
Hingham	— —	— —	Salem	2 75	2 90
Kennebrook Point	— —	— —	Salisbury	3 25	— —
Lynn, and disc'ge	3 00	— —	Stamford	— —	— —
Malden	— —	— —	Troy	1 90	— —
Marble Head	— —	— —	Washington, D. C.	1 60	— —
Medford	3 55	— —	West Chester	— —	— —
Mystic	— —	— —	Weymouth	— —	— —
Nantucket	3 00	— —	Yarmouth	— —	— —

The Pottsville *Miner* of July 28th says the quantity sent by railroad this week is 87,730 03—by canal, 39,509 10 : for the week, 127,239 13 tons, against 104,461 for the corresponding week last year.

The heavy shipments of the week show that the demand for coal still continues good. We presume that the trade will continue unchanged in this respect until the 1st proximo, Wednesday next, when an advance in tolls will to some extent, check the trade during the coming month, and make it dull.

The trade sums up this week as follows, compared with last year :

	1865. WEEK.	1865. TOTAL.	1866. WEEK.	1866. TOTAL.	INC. DEC.
P. & R. R. R.	70,514	1,450,014	87,730	2,164,133	714,119
Schuyl. Can.	33,947	338,808	39,510	706,665	367,857
L. Val. R. R.	23,421	706,387	42,042	1,030,873	324,487
Lehigh Can.	21,752	316,552	36,970	421,518	104,996
Scranton Sth.	1,824	464,879	23,241	569,315	104,436
" North.	274	130,586	9,784	225,298	94,712
Penn. C. C.					
By R. Road	9,837	281,359	11,751	114,397	d166,962
By Canal	1355	17,718	946	10,826	d 6,892
Del & Hudson	17,750	377,646	41,480	634,130	356,484
Wy'mg South				200,960	200,960
" North				12,248	12,248
Shamokin	11,713	194,533	16,514	293,526	98,994
Treverton	674	12,656	1,254	29,141	16,485
Short Mt.	2,032	10,110	3,263	39,549	29,139
Franklin	1,898	16,418	2,487	38,783	18,365
Broadtop	8,362	144,885	4,050	148,319	3,464
	203,353	4,462,551	321,121	6,635,341	
			203,353	4,262,551	
				117,708	2,172,790

FOREIGN MARKET REVIEW.

WEEKLY METAL REPORT.

Nos. 1 and 2 East India avenue, Leadenhall street, London, E. C., July 13, 1866.

There is no life in any branch of the metal trade. Money continues too dear for speculators, and consumers only buy for their most pressing wants. The proposed armistice between Austria, Prussia and Italy, is most anxiously looked for, and would stimulate business if actually accepted.

IRON.—The reports from Staffordshire and Wales as to trade are very dull, and many establishments only work half-time. Prices tend in buyers' favor. Scotch pig iron has declined to 52s. 6d., cash.

COPPER.—Although the market is a shade firmer, there is very little business doing either in English or foreign, and there is such a difference between buying and selling prices that quotations are quite nominal.

TIN.—The position of the market remains unaltered. Straits has changed hands to a small extent, at £76 per ton. Banca nominally £79 to £80. English tin obtainable considerably under official prices.

TIN PLATES are in good demand, with a stiffening tendency.

LEAD remains unaltered.

SPELTER.—After declining to £21 cash, has rallied, and a fair amount of business has been done at £21 10s. cash, and at £21 15s. for August. Special marks in outports £21 17s. 6d.

VON DADELSZEN & NORTH.

OIL TRADE CIRCULAR.

LONDON, July 13, 1866.

No important alteration in the market during the present week, but a change in prices in favor of sellers is expected.

REFINED PETROLEUM.—Can be bought in quantity at 1s. 11d. to 2s. per gallon.

CRUDE (PETROLEUM).—£16 per ton. Few buyers.

SPIRIT.—The low prices and heavy losses made have stopped the imports. Present price, 6d, to 1s. per gallon.

LUBRICATING OIL.—Seals freer, and at a slight advance in price.

COAL OIL—REFINED.—Without improvement. Quotations, 1s. 6d. to 1s. 10d. per gallon.

ONCE RUN—£2 10s. per ton in London.

CRUDE.—£8 per ton in London.

GREASE.—From £6 to £16 per ton.

PARAFFIN WAX.—1s. per lb.

PARAFFIN SCALES.—2d. to 4d. per lb.

The present stock of petroleum is nearly 12,000 barrels more than in 1865, and 2,000 less than in 1864.

STRANGE BROTHERS & Co., Mold and London.

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

ANTIMONY	Regulus, ₱ lb	$00	13¼@$	00 14
	Crude	..	..	.. ..
BORAX		..	34	.. ..
BRIMSTONE		67	50	72 50
COPPER	Ingot, Lake Superior, ₱ lb., cash	..	31	.. 31½
	Baltimore	..	31	.. 31½
	Pig, Chili	..	..	.. ..
	Bolts	..	43	.. ..
	Braziers	..	42	.. 43
	Sheathing	..	45	.. ..
	Yellow metal	..	33	.. ..
IRON—Pig	No. 1 Scotch, ₱ ton	46	00	50 00
	No. 1 American	46	00	48 00
	No. 2 "	45	00	.. ..
	No. 2 Charcoal	..	..	.. ..
Bar	Swedish, ordinary sizes	170	00	.. ..
	Amer. and Eng refined	125	00	145 00
	" " common	115	00	120 00
Rails, American currency		..	..	.. ..
" English gold		..	..	.. ..
Horse shoe iron		150	00	160 00
Rods 5-8@3-16rd. and sq.		130	50	185 00
Band		155	00	.. ..
Nail rods, 5-8 and 3-16		122	50	185 00
Hoops		160	00	225 00
Sheets, Russian, ₱ lb		..	28	.. 30
" English "		..	6¼	.. 9
" American "		..	25	.. 25½
Boiler Plates, English		..	..	.. ..
" American		..	..	.. ..
STEEL	Best cast in bars, war	..	26	.. ..
	Best sheet cast, "	..	26	.. ..
	Best cast circular saw plates 46 in	..	32	.. ..
	Double shear steel, war	..	26	.. ..
	Single " " "	..	23	.. ..
	Montague & Co. C. S., in bars	..	23	.. ..
	Round machinery cast	..	17	.. ..
	Best German	..	17	.. ..
	Government German	..	14	.. ..
	Eagle German	..	16	.. ..
	(L.) Blister, war	..	22	.. ..
	W. Jessop & Sons, blister, war	..	20	.. ..
	Double refined	..	28	.. ..
	Stone Axe shapes	..	28	.. ..
	Common blister	..	16	.. ..
	2d quality sheet	..	23	.. ..
	3d quality sheet	..	20	.. ..
LEAD	American, per 100 lbs.	..	..	.. ..
	German, Gold	6	75	7 12
	Spanish, "	6	75	7 12
	English, "	6	75	7 12
	Bar, per 100 lbs	11	50	.. ..
	Pipe and sheet	11	44	.. ..
TIN	Banca Gov., per 100 lbs. gold		20	.. ..
	Straits		19⅜	19½
	English		20	20¼
TIN PLATES	IC 10-14 prime charcoal	15	50	.. ..
	IX 10-14 " "	18	50	.. ..
	IC 12-12 " "	16	00	.. ..
	IX 12-12 " "	19	00	.. ..
	IC 14-20 " "	16	50	.. ..
	IX 14-20 " "	19	50	.. ..
	IC 14-20 Roofing ch. 1st	14	75	.. ..
	IC 14-20 " " 2d	13	75	.. ..
	IC 14-20 " Coke	12	25	.. ..
	IC 10-14 Coke	12	00	14 50
SPELTER	Lehigh, per lb., currency	..	12¼	.. ..
	Foreign " gold	..	7½	.. ..
ZINC	Mussulman & Amer	..	15	.. 15½
SOLDER	No. 1	..	24	.. ..
	No. 2	..	22	.. ..
QUICKSILVER		..	80	.. ..

LONDON METAL MARKET.

LONDON, July 13, 1866.

		£.	s.	d.	£.	s.	d.
COPPER	Best selected, per ton	89	0	0	@..	..	.
	Tough Cake & Tile, per ton	86	0	0	..	..	..
	Burra Burra " "	90	0	0	..	..	..
	Copper wire, per lb	0	0	11¾	..	..	..
	" tubes, " "	0	0	12¼	..	..	..
	Sheathing & Bolts, per ton	91	0	0	..	..	..
	Bottoms, " "	96	0	0	..	..	..
	Old (Exchange)	77	0	0	..	..	.
IRON	Bars Welsh in London	7	2	6	8	5	0
	Do. to arrive	7	0	0	7	5	0
	Nail rods	8	5	6	9	5	0
	Do. Stafford in London	8	10	6	8	17	6
	Bars " "	8	10	6	10	0	0
	Hoops " "	9	10	6	10	10	0
	Sheets, single	10	0	0	11	0	0
	Pig No. 1 in Wales	4	5	0	4	10	0
	Refined Metal, do	4	0	0	5	0	0
	Bars Common do	6	5	0	6	10	0
	Do. Mer b. Tyne or Tees	7	10	0	..	..	..
	Do. Railway in Wales	6	0	0	6	5	0
	Do. Swede in London	10	10	0	11	0	0
	To arrive	11	0	0	..	..	..
	Pig No. 1 in Clyde	2	12	9	2	17	9
	Do. f. o. b. Tyne or Tees	2	9	6	..	..	..
	Do. Nos. 3, 4, f. o. b. Do	2	6	6	2	7	0
	Indian Charcoal Pigs, in Lond.	7	0	0	7	10	0
	Railway Chairs	5	10	0	5	15	0
	Do. Spikes	11	0	0	12	0	0
LEAD	English Pig Common	20	5	0	..	..	..
	Do. ordinary soft	20	15	0	..	..	..
	Do. (W. B.)	22	10	0	..	..	..
	Do. Sheet	21	10	0	21	15	0
	Do. Red Lead	23	10	0	24	0	0
	Do. White	27	0	0	30	0	0
	Do. Patent Shot	23	15	0	24	0	0
	Spanish	20	0	0	..	..	..
STEEL	Swedish in kegs, rolled, p ton	13	0	0	14	0	0
	Do. hammered	15	0	0	16	0	0
	Do. in faggots	16	0	0	16	10	0
	English Spring	19	0	0	23	0	0
QUICKSILVER	Per bottle	7	0	0	..	..	..
SPELTER	Foreign, per ton	21	15	0	..	..	..
	To arrive " "	21	15	0	..	..	..
ZINC	In Sheets	30	0	0	..	..	.
TIN	English Blocks	85	0	0	..	..	..
	Do. bars in barrels	86	0	0	..	..	..
	Do. refined	88	0	0	..	..	..
	Banca	78	0	0	..	..	..
	Straits	75	0	0	..	..	..
TIN PLATES*	IC Charcoal, 1st qu., per box	1	10	0	..	..	..
	IX Do., 1st quality "	1	16	0	..	..	.
	IC Do., 2d quality "	1	8	0	..	..	..
	IX Do., 2d quality "	1	14	0	..	..	.
	IC Coke	1	4	0	..	..	..
	IX Do.	1	10	0	..	..	..
	Canada Plates, per ton, in London ; 20s. less at the works	13	10	0	..	..	..
YELLOW METAL	Sheathing, p lb	0	0	8½	..	..	..
	Sheets, per lb	0	0	8½	..	..	..

* At the works, 1s.@1s. 6d. less.

SALES OF ORES IN ENGLAND.

LEAD ORES

DATE.	MINES.	TONS.	AMOUNT.	PURCHASERS.
June 20	—Stiperstones	6	£16 10 0	
29	—Isle of Man Min. Co.	100	22 16 0	Sims, Willyams & Co.
July 4	—Stiperstones	50	11 17 6	Burry Port Co.
30	—Clara United	15	11 3 0	Sims, Willyams & Co
	—Bronfloyd United	42	12 10 3	Burry Port Co.

BLENDE.

DATE.	MINES.	TONS.	AMOUNT.	PURCHASERS.
June 26	—Great Laxey	100	£3 10 0	Attwood's Exec'rs.
30	— ditto	300	3 10 6	Vivian & Sons.

BLACK TIN.

DATE.	MINES.	T'S.	C. Q. LBS.	P. PER T.	AMOUNT.	PURCHAS'S.
June 30	—Gt. Wh. B.	22	18 0	27	£808 1 2	
	—P'd-an-dr'a	9	14 0	11	439 0 10	Bissoe.
	—Prosp. U'd.	10	1 1	21	£44 10 0 448 4 0	Chyand'r.
	— ditto.	0	9 3	1	28 0 0 13 13 0	ditto.

COPPER ORES.

SOLD AT TYACK'S HOTEL, CAMBORNE, JULY 5.

TOTAL PRODUCE.

MINES.	TONS.	PRICE.	MINES.	TONS.	PRICE.
Clifford Amal.	880..	£3 381 18 0	Nh. Roskear..	111..	£ 446 8 6
West Seton	479..	2,049 13 0	South Tolgus..	85..	386 5 0
Carn Camb'ne.	291..	888 6 6	S. Condurrow.	70..	238 15 6
Wheal Basset.	186..	933 16 6	N. Grambler..	42..	200 8 0
East Pool	153..	479 1 0	Wt. Stray P'rk	16..	66 0 0
South Frances.	134..	638 6 0	Crane	12..	53 2 0
Tolcarne	115..	406 10 0			

Average standard, £100 12 0 ; average produce, 6¾ ; average price per ton, £3 19 0 ; quantity of ore, 2,574 tons ; quantity of fine copper, 171 tons 9 cwts. ; amount of money, £10,168 4 6.

Previous sale.—Average standard, £98 16 0 ; average produce, 7⅛. Standard of corresponding sale last month, £107 13 0 ; produce, 6½.

BY WHOM PURCHASED :

NAMES.	TONS.	AMOUNT.
Vivian & Sons	508½	£2,165 10 2
Freeman & Co	224	1,184 1 6
Greenfell & Sons	283	1,506 16 10
Sims, Willyams & Co	324	1,039 3 6
Williams, Foster & Co	572⅝	2,392 17 2
Mason & Elkington	28	104 8 0
Bankart & Sons	11	13 4 0
Copper Miners' Company	119	514 0 0
Charles Lambert	231	989 11 4
Sweetland, Tuttle & Co	211	831 12 0
Total	2,574	£10,168 4 6

NEW YORK STOCK MARKET.

MINING.	July 28. BID.	ASKED.	July 30. BID.	ASKED.	July 31. BID.	ASKED.	Aug. 1. BID.	ASKED.	Aug. 2. BID.	ASKED.	July 3. BID.	ASKED.
Ada Elmore	.....	.....	3 00	3 50	3 00	.....	3 00	.....	3 00	.....	3 10	3 50
Altona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	1 00	2 00	1 00	.....	1 25	.....	1 00	2 00	1 00	.....	.....	.....
Atlantic & Pacific	1 75	2 50	1 80	2 50	2 00	.....	2 00	2 50	1 50	.....	1 80	2 50
Bates & Baxter Gold	1 00	.....	1 50	2 00	1 25	1 95	.....	2 00	.....	.....	.....	.....
Benton Gold	1 45	1 50	1 40	1 60	1 40	1 60	1 40	1 50	1 40	1 50	1 40	1 50
Bobtail Gold	.....	3 00	.....	3 00	.....	3 00	.....	3 00	.....	3 00	.....	.....
Consolidated Gregory	20	25	20	30	20	60	20	10	20	25	19	50
Corydon	1 75	2 25	1 75	2 25	2 15	.....	2 15	2 75	2 00	2 50	2 15	2 30
Downieville Gold	80	86	87	95	95	98	94	96	95	97	97	98
Eagle Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 50	.....	2 50
Gold Hill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grasss Valley Gold	.....	.....	.....	.....	.....	.....	70	.....	.....	.....	.....	.....
Gunnell Gold	1 05	1 05	1 05	1 08	1 19	1 20	1 18	1 20	1 13	1 15	1 07	1 09
Gunnell Central	.....	.....	.....	5 00	.....	.....	.....	.....	.....	.....	.....	.....
Holman	34	36	33	35	32	38	30	40	32	40	35	36
Hope Gold	.....	.....	2 60	.....	2 00	.....	2 25	.....	2 50	3 00	2 00	.....
Keystone Silver	8	10	9	12	10	.....	11	12	9	12	9	12
Kipp & Buell Gold	.....	1 60	1 30	1 75	1 35	1 55	1 40	1 75	1 45	.....	1 50	1 65
Liberty Gold	.....	15	.....	15	.....	25	.....	.....	.....	.....	.....	25
Liebig Gold	.....	50	50	1 00	80	1 00	50	1 00	50	.....	.....	.....
Manhattan Gold	.....	.....	.....	3 00	.....	.....	.....	.....	.....	.....	.....	.....
New York	1 17	1 25	1 25	1 30	1 35	1 40	1 35	1 40	1 30	1 35	1 12	1 25
Oak Hill Gold	.....	.....	2 00	2 50	2 00	.....	.....	.....	.....	.....	.....	.....
Quartz Hill	3 90	4 10	4 05	4 50	4 00	4 25	4 15	4 45	4 00	4 20	4 00	4 25
Rocky Mountain Gold	.....	.....	.....	.....	.....	.....	3 00	3 50	3 00	3 25	2 50	3 00
Silver Eagle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smith & Parmelee Gold	8 25	8 40	8 65	9 00	9 80	9 85	9 25	9 50	9 25	9 50	9 40	9 60
Texas Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	.....
Virginia City	.....	.....	.....	.....	.....	.....	50	.....	.....	.....	.....	50
Waddingham Gold	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Gold	.....	3 00	2 00	3 00	2 00	3 00	2 00	3 00	2 00	3 00	2 00	2 50
West Fellows Gold	.....	.....	.....	1 75	.....	.....	.....	.....	.....	.....	.....	1 00
Caledonia Copper	4 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hancock Copper	25	00	.....	.....	25	00	.....	.....	.....	.....	.....	.....
Canada Copper	.....	1 00	.....	1 00	.....	1 00	.....	90	.....	90	.....	90
Evergreen Bluff Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10 00
French Creek Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 25	.....	1 25
Hilton Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aztec Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montana Gold	.....	.....	.....	40	.....	30	.....	35	.....	.....	25	50
Knowlton Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mendota Copper	.....	.....	.....	3 00	.....	3 50	.....	3 50	.....	.....	.....	.....
Minnesota Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Norwich Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ogima Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deubo Lead	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phœnix Lead & Mining Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Redwood Lead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wallkill Lead	85	1 00	90	93	1 13	1 20	1 10	1 25	1 15	1 50	1 11	1 12
Columbian Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Schuylkill Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lake Superior	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copake Iron	.....	.....	.....	60	.....	.....	.....	1 00	.....	.....	.....	.....
Foster Iron	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Annular Drill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perry & Peop. S. Min. Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockland Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Isle Royal Copper	.....	12 00	.....	12 00	.....	12 00	.....	12 00	.....	.....	.....	14 00
British Amer. Coal, Pref.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rutland Marble	14 00	.....	15 00	18 00	15 00	25 00	15 00	18 00	15 00	18 00	15 50	18 00

OIL STOCKS.

Bennehoff Run	5 80	5 85	5 90	6 00	5 80	5 90	6 50	6 60	7 35	7 50	7 50	7 60
Buchanan Farm	.....	.....	.....	27	20	25	21	30	.....	.....	20	.....
Central	2 10	2 40	2 05	2 40	2 15	2 40	2 15	2 35	2 15	2 40	2 25	2 35
Excelsior	22	31	27	40	22	33	20	32	25	30	28	30
First National	5	.....	5	8	.....	.....	5	.....	.....	.....	.....	.....
Ivanhoe	2 00	.....	2 00	2 25	2 00	.....	2 00	.....	2 00	.....	2 00	.....
N. Y. & Alleghany	4 75	5 25	4 75	5 00	4 90	5 00	4 80	5 10	4 90	5 00	4 80	5 00
Northern Light	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 00
Oil Creek of N. Y	20	35	.....	35	.....	50	25	.....	.....	.....	.....	35
Pit Hole Creek	2 10	2 25	2 10	2 20	2 15	2 25	2 25	2 40	2 20	2 40	2 10	2 35
Rynd Farms	20	25	20	25	.....	.....	20	.....	20	.....	20	25
Shade River	25	30	16	30	20	30	.....	40	.....	35	20	30
United States	7 85	8 00	7 90	8 05	8 25	8 35	8 15	8 25	7 00	7 25	7 80	8 00
Palmer Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire and Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Venango & Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allen Wright	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bergen Oil & Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bennehoff & Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Equitable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fee Simple	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forest Co. Petroleum Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gt. Western Consolidated	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Guild Farm	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Heydrick Bros	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Homewack	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lilly Run	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oak Shade Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. Oil Creek	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
President	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sherman & Barnsdale	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

FREE LIST.

Bennehoff Run Oil	1 00	1 75	.....	2 00	.....	.....	.....	3 00	.....	.....	.....	2 00
Brevoort	1 20	1 50	1 10	1 40	1 13	1 50	1 15	1 50	1 10	1 40	1 25	2 50
Bliven	.....	.....	.....	1 00	.....	1 00	.....	.....	.....	.....	.....	.....
Brooklyn	.....	.....	.....	60	.....	50	25	50	.....	.....	15	40
Bradley	.....	10	.....	8	.....	8	.....	10	.....	4	.....	8
Bemis Heights	3 00	.....	.....	.....	3 50	.....	3 50	.....	3 00	4 00	.....	.....
Cherry Run Petroleum Co	.....	.....	.....	.....	.....	20	.....	20	.....	.....	.....	20
Cherry Run Special	.....	30	10	30	.....	30	.....	30	.....	30	.....	30
Clinton Oil	1 00	.....	1 30	2 00	1 35	2 00	1 10	2 00	1 25	.....	1 25	2 00
Consolidated (New York)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire City Pet'm Co	.....	.....	.....	40	.....	35	.....	.....	.....	.....	.....	40
Eclectic Oil	.....	2 00	.....	.....	.....	2 00	.....	2 00	.....	.....	1 00	2 00
Enniskillen	.....	.....	.....	.....	.....	2 00	.....	.....	.....	.....	.....	.....
Germania	.....	.....	5	.....	5	9	7	10	.....	.....	5	7
Hamilton McClintock	.....	1 25	.....	1 25	.....	1 25	.....	.....	.....	.....	.....	.....
Heydrick	.....	25	20	25	19	25	.....	25	19	30	.....	25
High Gate	.....	14	.....	15	.....	15	.....	15	.....	15	.....	15
Inexhaustible	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liberty	.....	.....	.....	.....	.....	20	.....	20	.....	.....	.....	.....
Mt. Vernon	.....	.....	.....	.....	.....	25	.....	.....	.....	.....	.....	.....
Manhattan	.....	25	15	.....	.....	25	15	.....	.....	.....	.....	30
National	1 00	.....	1 00	.....	1 75	.....	1 00	3 50	1 00	.....	.....	3 50
New York & Newark	.....	.....	.....	10	.....	4	3	6	1	5	4	8
New York, Phil. & Balt	10	12	.....	12	5	8	5	10	.....	10	5	10
Second National	10	.....	10	.....	15	40	.....	.....	.....	.....	.....	.....
Oceanic	.....	.....	7	10	7	10	8	.....	8	10	8	.....
Pepper Well	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pit Hole Farms	.....	50	.....	50	.....	50	10	45	.....	.....	.....	50
Pet. Consolidation	4	6	.....	.....	.....	10	4	.....	.....	10	3	10
Union	2 80	.....	2 80	.....	2 90	.....	2 75	.....	2 80	.....	2 75	4 00
United Petroleum Farms	20	22	20	23	20	25	20	23	.....	.....	.....	22
West Va. Oil & Coal Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Webster	20	25	.....	25	16	80	18	25	20	25	15	2

BOSTON STOCK MARKET.

Reported for the Journal of Mining by Lombard & Co., 99 State Street, Boston.

COAL.

Companies.	July 27. BID.	ASKED.	July 28. BID.	ASKED.	July 30. BID.	ASKED.	July 31. BID.	ASKED.	Aug 1. BID.	ASKED.	Aug. 2. BID.	ASKED.
Belmont	2 75	3 50	2 75	3 50	2 50	3 00	2 50	3 00	2 50	3 00	2 50	3 00
Collins	.....	80 00	.....	80 00	.....	80 00	.....	80 00	.....	80 00	.....	80 00
Cape Breton	2 75	3 75	2 75	3 75	2 75	3 75	2 75	3 75	2 75	3 75	2 75	3 75
Eagle Hill Mutual	50	1 00	50	1 00	50	1 00	50	1 00	50	1 00	50	1 00
Franklin	.....	3 00	.....	3 00	.....	3 00	.....	3 00	.....	3 00	.....	3 00
Gilberton	25 00	30 00	25 00	30 00	25 00	30 00	25 00	30 00	25 00	30 00	25 00	30 00
Glenville	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50	2 00	2 50
Harleigh	50 00	60 00	55 00	60 00	55 00	60 00	55 00	60 00	55 00	60 00	55 00	60 00
Lackawana	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00	5 00	7 00
Lorberry	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Locust Dale	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00	17 00	19 00
Mammoth Vein	10 50	11 00	8 50	10 00	8 50	9 00	8 00	9 00	7 00	9 00	7 00	9 00
Mount Pleasant	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00	28 00	30 00
New England	26 00	30 00	26 00	30 00	26 00	30 00	26 00	30 00	26 00	30 00	26 00	30 00
Short Mountain	20 50	21 00	20 00	21 00	19 00	20 00	18 50	20 00	19 50	20 00	21 00	22 00
Summit Branch	13 40	13 60	13 40	13 60	13 00	13 50	13 00	13 50	13 00	13 50	13 00	13 50

MINING.

Albany and Boston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12 00
Bay State.....asst. pd	.....	.....	12 75	12 87	12 12	13 50	12 25	13 00	12 25	.....	12 50	13 00
Boston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canada	.....	.....	.....	1 00	.....	80	.....	50	.....	50	50	.....
Concord	.....	.....	3 25	.....	3 12	4 00	3 25	4 00	3 50	4 00	3 25	4 00
Copper Falls	.....	.....	40 00	.....	.....	41 00	40 00	41 00	41 75	42 00	43 50	44 00
Franklin	.....	.....	42 50	43 00	43 12	44 00	45 00	45 25	46 75	47 00	47 50	47 75
Hancock	.....	.....	25 00	25 37	25 50	26 00	26 37	26 50	27 75	28 00	27 75	28 50
Humboldt	.....	.....	4 25	4 50	4 25	4 37	4 00	4 25	4 00	4 25	4 00	4 37
Huron	.....	.....	.....	.....	.....	.....	.....	40 00	.....	.....	.....	.....
Isle Royal	.....	.....	.....	.....	10 00	.....	.....	10 00	10 00	12 00	10 00	12 00
Mesnard	.....	.....	2 00	.....	2 00	.....	1 87	2 25	.....	2 50	1 87	2 50
Minnesota	.....	.....	8 00	.....	8 00	9 00	8 25	9 50	8 50	9 00	8 50	9 50
National	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18 00
Petherick	.....	.....	5 12	5 25	5 00	5 25	5 00	5 25	5 00	5 25	5 00	5 25
Pewabic	.....	.....	34 25	35 00	34 25	35 00	34 50	35 00	35 75	36 00	35 75	36 00
Phœnix	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8 50	12 00
Pittsburg	.....	.....	45 00	.....	45 00	.....	44 50	.....	44 50	44 75	.....	.....
Pontiac	.....	.....	.....	1 50	.....	1 37	1 25	1 50	1 25	1 50	1 12	1 25
Quincy	.....	.....	43 00	44 00	44 50	43 25	45 00	43 25	43 75	43 50	43 75	
Rockland	.....	.....	6 75	7 00	7 25	.....	7 25	.....	7 50	.....	7 50	8 00
South Side	.....	.....	1 87	2 00	1 87	.....	.....	.....	1 50	2 00	1 87	2 00
Star	.....	.....	1 50	2 00	1 87	2 00	1 87	2 00	1 87	2 00	2 00	.....
Superior	.....	.....	3 12	3 37	3 25	3 50	3 25	3 75	3 62	3 87	3 75	4 00
Toltec	.....	.....	.....	.....	.....	.....	.....	.....	75	.....	.....	10 00
Winthrop	.....	.....	1 12	2 00	1 12	2 00	1 25	2 00	1 25	2 00	1 25	2 00
Consolidated Gregory Gold	20	50	21 00	20	25	20	50	20	30	20	70	20
Quartz Hill Gold	4 05	4 15	4 00	4 10	4 05	4 10	4 00	4 25	4 15	4 25	4 00	4 40
Smith & Parmelee Gold	8 25	8 30	8 25	8 30	8 65	9 40	9 80	9 90	9 30	9 50	9 25	9 50

PETROLEUM

Beebe Farm	4 00	.....	4 00	.....	4 00	.....	4 00	.....	4 00	.....	4 00	.....
Boston and Kentucky	.....	20	.....	20	.....	20	.....	20	.....	20	.....	20
Boston Oil Creek Land Co	15	50	15	50	15	50	15	50	15	50	15	50
Boston Petroleum Oil Co	50	.....	50	.....	50	.....	50	.....	50	.....	50	.....
Botolph Oil Well Co	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50	1 00	1 50
Crescent Petroleum Co	.....	1 00	.....	1 00	.....	1 00	.....	1 00	.....	1 00	.....	1 00
Everett Oil Co	8	10	8	10	7	10	7	10	7	10	7	10
" " (Pref. Stock)	40	1 00	40	1 00	50	75	50	75	50	75	40	65
Farrar	4 00	5 00	4 00	5 00	4 00	5 00	4 00	5 00	4 00	5 00	4 00	6 00
Fuller Farm	15	20	15	20	15	20	15	20	15	20	15	20
Great Basin	5	10	5	10	5	10	5	10	5	10	5	10
Indian Spring	15	30	15	30	15	30	10	25	10	25	10	25
Mass. and Oil Creek	60	70	60	70	60	.....	76	1 00	65	75	60	70
New England	10	15	15	20	15	20	15	20	15	20	15	20
New York and Boston	.....	30	.....	30	.....	30	.....	30	.....	30	.....	30
Pepper Petroleum	3 00	3 50	3 00	3 50	3 00	3 50	2 90	3 25	2 75	3 00	2 75	3 00
Pittsburgh and Boston	15	25	15	25	15	25	12	15	12	15	12	15
Tremont	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50	2 00	3 50
Suffolk and Oil Creek	.....	10	.....	10	.....	10	.....	10	.....	10	.....	10
Winthrop	2	15	2	15	2	15	2	15	2	15	2	15
Independ. of U. S. & C.W.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

New York Companies.

Bennehoff Run	5 70	5 80	5 80	5 90	5 90	6 00	5 80	5 90	6 50	6 80	7 35	7 40
Bergen Oil and Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bradley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buchanan Farm	20	27	24	27	23	25	.....	27	20	25	22	30
Central	2 00	2 25	2 10	2 25	2 00	2 20	2 15	2 30	2 15	2 45	2 15	2 35
Cherry Run Special	20	40	20	30	.....	30	10	30	10	30	12	30
Consolidated	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire City	.....	28	10	30	.....	20	.....	40	.....	35	.....	35
Empire and Pit Hole	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Excelsior	20	30	20	30	27	35	22	28	20	33	25	33
Northern Light	.....	2 50	.....	2 00	.....	2 00	.....	.....	.....	2 50	.....	2 00
Oceanic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oil Creek	30	45	30	45	30	40	25	35	30	35	.....	35
Palmer Petroleum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
President	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pit Hole Creek	2 10	2 20	2 10	2 20	2 10	2 20	2 10	2 20	2 25	2 30	2 15	2 30
Rynd Farm	20	30	20	25	20	25	20	25	20	25	20	.....
Union	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Webster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stewart's Run	20	25	16	20	16	20	18	20	20	25	20	25
United States	7 80	7 90	7 85	7 90	7 90	8 05	8 30	8 40	8 21	8 30	6 75	6 90

PRICES OF ASSAYING IMPLEMENTS.*

[CORRECTED WEEKLY.]

Smelting Furnaces	$35 00@	40 00
Cupelling "	35 00@	40 00
Scales	10 00@	30 00
Assay Balances and Weights	100 00@	200 00
Plumbago Crucibles	25@	1 50
Paris "	15@	1 25
Porcelain Evaporating Dishes	25@	5 00
Fire Tongs	75@	3 50
Hammers	1 00@	2 50
Funnels	15@	1 00
Litmus Paper, quire	1 00@	1 25
Ingot Moulds	1 25@	3 00
Flasks, Bohemian Glass	15@	1 00
Sand Baths, Iron	25@	1 00
Pivers	50@	2 00
Mortar and Pestle, Iron, Agath, etc	50@	20 00
Lamps, Gas and Alcohol	75@	5 00
Blowpipes	50@	3 00
Hydro-Oxygen Blowpipes	25 00@	125 00
Pincers, or Cutting Plyers	75@	1 50
Glass Tubes, German, etc., per lb	75@	1 50
Muffler	50@	1 50
Anvils	1 00@	2 00
Cupel Moulds	3 50@	5 00
Cupels, per doz	50@	3 50
Bone Ash, per lb	25@	50
Test Lead, "	50@	75

* These articles can be procured at the stated rates, by sending order, with remittance, to

WESTERN & COMPANY, 37 Park Row.

CHEMICALLY PURE PREPARATIONS USED IN THE VOLUMETRIC ASSAY.

Acid, Acetic	$0 75 oz
" Arsenious	0 05 lb
" Hydrocholoric	0 50 oz
" Nitric	0 60 lb
" Oxalic	0 20 oz
" Sulphuric	0 75 lb
Ammonia	0 60 lb
Baryta, Carbonate	0 20 oz
" Hydrate	0 40 oz
" Nitrate	0 12 oz
Barium, Chloride	0 12 oz
Copper, Sulphate	0 10 oz
Iodine	0 75 oz
Iron, Sesquichloride, Cryst	0 25 oz
Lead, Nitrate	0 10 oz
Mercury, Peroxide	0 20 oz
" Protonitrate	0 25 oz
" Chloride	0 20 oz
Potassa, Carbonate	0 25 oz
" Bichromate	0 15 oz
" Bichromate, Fused	0 20 oz
" Chromate	0 15 oz
" Hydrate	0 40 oz
" Ferrocyanide	0 25 oz
" Permanganate	0 18 oz
" Sulphate	0 10 oz
Silver, Nitrate	Gold 1 10 oz
Soda, Acetate	0 10 oz
" Carbonate	0 10 oz
" Hydrate	0 20 oz
" Phosphate	0 10 oz
Sodium, Chloride	0 10 oz

UNITED STATES SECURITIES.

Reported for the Journal of Mining by Messrs. MEIGS, VON SEYBOLD & CO., No. 4 Broad st., New York.

Friday Evening.

LOANS. INTEREST PAYABLE IN GOLD.	AUTHORIZING ACTS.	AMOUNT OUTSTANDING.	RATE.	PRIN. PAY.	INTEREST.	WHEN PAYABLE.		OFF. PER CENT.	ASKED PER CENT
Registered Bonds.....	28 January, 1847	$9.415.250	6	1867	.....	Jan.	July.	130	.....
Coupon "								.....	.....
Registered Bonds.....	31 March, 1848	8.908,342	6	1868	.....	Jan.	July.	.....	.....
Coupon "								125	.....
Registered Bonds.....	22 June, 1860	7.022,000	5	1871	.....	Jan.	July	103	.....
Coupon "								103	104
Registered Bonds.....	14 June, 1858	20,000.000	5	1874	.....	Jan.	July.	98½	.....
Coupon "								99½	100
Bonds. March 3, 1863		.....	6	1881	.....			.....	.....
Oregon War Debt		1 016.000	6	1881	.....	Jan.	July.	100	.....
Registered Bonds.....	8 Feb. & 17 July & Aug., 1861	282.295.500	6	1881	.....	Jan.	July.	109⅛	109⅜
Coupon "								.....	.....
Registered "	25 February, 1862 (5-20's)	514.780,500	6	1882	.....	May	Nov.	105	.....
Coupon "								.....	.....
Registered "	(5-20's) new issue	100.000,000	6	1884	.....	May	Nov.	105⅞	106¼
Coupon "								106⅛	106¼
Bonds. March 3, 1865	(5-20s)	80,734,500		1885	.....			106	.....
Registered "	(10-40's)	171.219,100	5	1904	.....	Mar.	Sept.	95½	95½
Coupon "								99⅛	99¾
Total April 1									

LOANS. INTEREST PAYABLE IN LAWFUL MONEY.	AUTHORIZING ACTS.	RATE.	AMOUNT OUTSTANDING.	PRINCIPAL PAYABLE.	INTEREST.	WHEN PAYABLE.		OFF.	ASKED.
Bonds, Cent'l P. R. R. Co., July 2, 1864		6	$2.362.000 00	1895	.....	Jan.	July	.....	.....
Bonds, Union P. R. R. Co., July 2, 1864		6	2,130.000 00	1895	.....			.....	.....
Temporary Loan		4		10 days' notice	.....			.....	.....
Temporary Loan		5	124,561.486 00	10 days' notice	.....			.....	.....
Temporary Loan		3		10 days' notice	.....			.....	.....
Certificates of Indebtedness. March 1. 1862		6	43.025,000 00	1 yr from date	.....	1 yr. fr. date		.....	.....
1 and 2 Years' Notes. March 3, 1863		5	.....	.....	.....	1 yr. fr. date		.....	.....
3 Years' Compound Interest Notes	March 3, 1863 / June 20, 1864 / June 30, 1864	6	162.012.140 00	3 yrs from date	.....	At maturity		.....	.....
3 Years' Treasury Notes	March 3, 1865	7.3	.....	3 yrs from date	.....	Aug.	Feb.	104⅜	104½
3 Years' Treasury Notes, March 3, 1865		7.3	812.221.600 00	3 yrs from date	.....	June	Dec.	104¼	104⅜
3 Years' Treasury Notes. March 3. 1865		7.3	.....	3 yrs from date	.....	July	Jan.	104¼	104½
Aggregate of Debt Bearing Lawful Money Interest. April 1				Total Interest					

SAN FRANCISCO STOCK MARKET.

LATEST BY MAIL.

NAME.	FRIDAY. June 29. Open'g	Clos'g	Sales for week Ending June 29. Shares.	Amount.
Sierra Nevada...	$ 2	$ 2	152	$ 343 00
Imperial.....	105	103	264	22.764 00
Gould & Curry...	700	700	5	3.588 00
Chollar—Potosi..	170	183	99	15,387 00
Yellow Jacket..	687½	693½	122	77.246 00
Bullion	57	57	125	8,042 00
Crown Point....	.....	.....	5	4,530 00
Belcher.....	162½	162½	102	18.249 00
Overman	23	21½	700	18.378 00
Ophir	207½	213	227	55,108 00
Hale & Norcross	.....	.....	7	8.810 00
Exchequer	.....	.....	...	.....
Savage	900	895	14	12.995 00
Empire Mill.....	.....	.....	..	.....
Alpha.....	.....	.....	8	1.67500
Lady Bryan. ..	2⅜	2⅜	650	1.588 00
Daney	.....	.....	....	.....
Confidence.....	47⅜	51	626	32,635 00
Baltimore Amer.	....	.....	....	.....
De Soto.....	.....	.....	20	70 00
Kentucky Cop. Co	.....	.....	....	.....
Golden Rule.....	.....	.....	....	.....

LATEST BY TELEGRAPH

SAN FRANCISCO, July 28.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	700	Crown Point	875
Savage	950	Yellow Jacket	575
Chollar-Potasi	175	Belcher	125
Ophir	250	Alpha	100
Hale and Norcross	1500	Imperial per share	90

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office :

56,518.—Dumping-car.—James Braidwood, Wilmington, Ill.:

I claim the frame, c, constructed substantially as herein recited, in connection with a rail track, and for the dumping of the cars, all constructed and operated as described.

56,549.—Apparatus for Treating Ores with Chlorine.—Eugene Gaussoin, Baltimore, Md.:

I claim, 1st, The inclosing walls and floor, forming chambers in which the barrels revolve, and from which the fluid contents are removed by drains from the sides and the solid by an aperture at the corner of the arch.

2d, The combination of hollow axles and perforated walls, forming a series of connections from the generator, from barrel to barrel, and ultimately to the discharge apertures at the summit.

3d, The arrangement of the barrels with their operating gearing, so that their respective openings are in revolution presented alternately to the openings of the ones next in series above, and next below, to afford the means of discharging, as described.

4th, The combination of the revolving barrels and the openings, J, and wall openings, H, as and for the purpose described.

5th, The combination of the valve, K, with the drains, Y, Y, W, as and for the purpose described.

56,552.—Reverberating and other Draught Furnaces.—John R. Grout, Detroit, Mich.:

I claim, 1st, In a reverberating or other draught furnace, so arranging the atmospheric passage ways, a, a'', and b, b, b'', in the bridge wall and arch of the furnace, that the air passing in thin currents, shall be heated by contact with the walls, and introduced from above and below into the compartment, D, in converging currents of the full width of the throat, C, when mingling with the unconsumed, carbonized gases evolved from the fuel in the fire-room, B, their complete combustion and perfect diffusion will be effected, substantially in the manner set forth.

2d, The combination of the plate, f, valve, g, rod, h, and lever, i, in the lower air passage and the similar combination in the upper air passage, or their equivalents for the regulation of the passage of air through the atmospheric passage ways, a and b, substantially as and for the purposes set forth.

3d, Constructing the bridge, C, across the lower atmospheric passage way for the protection of the valve, substantially as set forth.

56,556.—Force Pump.—E. B. Harris, Wilmington, Ill.:

I claim the arrangement of the well, A, cylinders, C, C, valves, D, D, vertical rods, E, E, disks, F, F, valves, G, G, partitions, H, H, valves, I, I, and trough, J, operating in the manner and for the purpose herein specified.

56,595.—Mode of Granulating Furnace Slag.—Chas. E. Morris and John Eynon, Bridgeport, Pa.:

We claim granulating furnace slag by running it in its hot fluid condition from the furnace, directly into any suitable receiver containing cold water, substantially in the manner described.

56,607.—Collar for Drill-rods.—V. T. Priest, Decator, Ill.:

I claim, 1st, The combination of the rods section, A', and grooved section, A, connected by a screw-joint, with the inclined or mitered key, I, and key-seat, C', the adjustable band, F, and groove, H, substantially as described.

I also claim the grooves, D, and recesses, E, in the upper section or rod, A, in combination with the band, F, having internal pins, G, substantially as described.

56,620.—Method of Packing Nitroleum, Nitroglycerine, etc.—Taliaferro P. Shaffner, Louisville, Ky.:

I claim, 1st, The placing between a bottle containing nitroleum, nitro-glycerine, or other liquid combustible compound and an outer casing or box, india-rubber (or caoutchouc) or other material, to serve as springs for the purpose of lessening concussion upon the said liquid substance by an exterior force resulting from a pull or otherwise, substantially as hereinbefore described.

2d, The application of plaster-paris powder, or of other equivalent non-conductor of heat and non-explosive or combustible substance, when saturated with the liquids hereinbefore mentioned, in combination with the arrangements or parts substantially as hereinbefore described.

3d, The use of metallic bottles for the purpose of confining the nitroleum, nitro-glycerine, or other explosive liquid, in combination with the arrangements and parts, substantially as hereinbefore described.

56,623.—Driving Well-tubes.—Calvin Shephard, Kattelville, N. Y.:

I claim, 1st, The combination of the tube, A, constructed as described with the flange, F, the collar, E, and platform, D, suspended therefrom, all arranged and operating in the manner and for the purpose herein specified and shown.

2d, I also claim the platform, D, supported on the flange, F, as shown in combination with the well-tube, substantially as described.

56,627.—Pump.—Joseph A. Stansbury, Baldwinsville, N. Y.:

I claim, 1st, The combination of the right-angled wings, g, g, attached to and turning with the same shaft, and the guide, G, when said parts are used in connection with a pump, substantially as herein specified.

I also claim the butment made up of the parts, m and n, in combination with the wings, g, g, operating substantially as herein set forth.

I also claim the spring, l, in combination with the wings, g, g, and guide, G, operating substantially as specified.

I also claim, in combination with the wings, g, g, and the shaft, f, the hub, D, provided with the flange, b, substantially as described.

I also claim the arrangement as a whole consisting of the wings, g, g, guide, G, butment, m, n, hub, D, and spring, l.

56,635.—Reducing Oxyd of Lead.—Thomas Taylor, Washington, D. C.:

I claim, 1st, The protoxyd of lead as a flux, in the reduction of lead dross, substantially for the purpose and in the manner herein set forth.

2d, The use of iron as a deoxydizer of the protoxyd of lead, substantially for the purpose and in the manner herein set forth.

56,636.—Gold Separator.—Charles F. Testman, Portland, Oregon:

I claim three things, the first is the process of drying dirt in the boxes, a, a and b, b, by means of the fire, e, the second is the application of the springs, o, o, to the roller, m, and the third is the method of constructing the amalgamating-pans, r, r, and procuring thereof the gold dust in the quicksilver pockets by means of the continued revolution of the stirrer, q, q.

56,637.—Pump.—Daniel M. Thomas, Dowagiac, Mich.:

I claim, 1st, The arrangement of the plunger chamber, B, so as to communicate with the induction chamber, E, at its upper end, and the side passage, D, which leads to the receiving chamber, G, substantially as described.

2d, In combination with a force pump, which is constructed with upper and lower inflow chambers, leading to the main piston chambers, I claim the application of a safety-valve, h, to the vertical discharge pipe, H, substantially as described.

3d, The vibrating frame, C, connected to the working-beam, L, by means of flexible connections, l, l, in combination with the segments, J, J, and pendulum, J2 for operating the pump pistons, substantially as described.

56,671.—Pump.—Joseph Douglass, assignor to W. & B. Douglass, Middletown, Conn.:

I claim the combination of the diaphragm, D, hollow piston-rod, B, having a perforated enlargement, B', and piston, G, as described, valve, H, with its shindle, d, and guide-fingers, c, cylinder, L, and side-pipe, I, provided with valves, J and J', all arranged and operating substantially as described for the purpose specified.

Special Scientific Brevities.

☞ Santonine is said by Dossmann to be a glucoside. Dr. Schmidt has boiled it for a long time with sulphuric acid, and has been unable to prove the production of glucose. Unless the water is replaced as it evaporates, the acid as it becomes concentrated browns the santonine and gives rise to a resinous product, which, however, when treated with water, and crystallized from alcohol, gives colorless santonine again. Schmidt believes that the resinous body is santonine deprived of water by the sulphuric acid.—*Bull, de la Soc. Chim.*, April, 1866, p. 286.

☞ To render fabrics incombustible, Hottin, in Paris, proposes the following: A solution of acid phosphate of lime is treated with ammonia in excess, filtered and purified by animal black, concentrated by evaporation, five per cent. of gelatinous silica added and the whole evaporated to a crystalline mass. The fabrics are immersed in a solution containing thirty per cent. of this mixture (called hottine), thirty-five per cent. of gum and thirty-five per cent. of starch.

☞ It is said that the system of forcing air through molten metal, to give it a steely texture, is not due to either Mr. Mushet or Mr. Bessmer; and the use of manganese, which is all that gives advantage in the use of spiegeleisen, was suggested and used by Robert Heath almost before Mr. Mushet knew that the iron trade existed.

☞ Landerer states that opium is adulterated in Asia Minor (Turkey opium) with crushed raisins and salep. The former is detected by ascertaining the presence of grape sugar with Barreswil's or other cupro-potassic solution; the latter will be recognized by tincture of iodine showing the reaction of starch.

☞ Schonbein states that a weak solution of peroxide of hydrogen may be prepared by shaking violently for a few seconds amalgamated granulated zinc with a little distilled water contained in a large bottle. Oxide of zinc and peroxide of hydrogen are formed, but no zinc or mercury is dissolved.

☞ An alloy, composed of 3 lbs. of lead, 16 lbs. of tin and 3 lbs. of zinc, is capable of being rolled out into plates for making white ware of a superior quality, as a substitute for Britannia metal.

☞ In electrotyping moulds which have to be covered with plumbago, it is preferable to coat the mould with acetate of copper or nitrate of silver, and submit it to the action of sulphuretted hydrogen. Then dry and use.

☞ Dr. Hirschsprung states that in some acute renal affections, and a short time before death, an exudation and crystallization of urea takes place on the head, neck, and thorax.

☞ The skulls of Spaniards vary in shape more than those of most nations.

Mineral and other On-dits.

☞ A movement is started to extend the Iron Mountain Railroad of Missouri to Memphis, Tenn. The proposed route will give almost an air line from St. Louis to New Orleans—shorten the distance between those points to 671 miles, and place them within twenty-seven hours of each other. The Memphis people promise to build the projected road to the Missouri border, if St. Louis will extend the Iron Mountain road to the Arkansas line.

☞ It is stated as a fact that for ten years past the gas works at Honesdale, Pennsylvania, have mainly used coals from Newcastle, England. It has been found cheaper to buy the English coals in New York, and transport them more than two hundred miles into the interior, than to get coals across the State by railroad and canal. During the last three years English coals have been used exclusively.

☞ Kentucky boasts of rich iron and lead ores in large quantities, and an inexhaustible lithographic stone quarry. Also cannel coal is found there.

☞ The Australian gold-fields had produced this year up to latest date, 1,648,693 ozs. of gold, against 1,725,000 ozs. produced in a like period last year.

☞ In 1857 the San Francisco foundries used 2,000 tons of pig-iron; 5,000 in '59; 10,000 in '63; 14,000 in '64, and 20,000 during '65 and '66.

☞ A bituminous mineral has been found near Paris, which, we are informed, yields a large proportion of very good oil.

All Sorts.

☞ A party of forty Wisconsin editors, with their wives, have recently been traveling through Michigan.

☞ Longfellow has an income of $33,260. He married a rich wife.

☞ The value of oil destroyed by the several fires which have taken place in Venango county during the past year is not much less than $1,000,000.

☞ An advertisement was inserted in the Paris papers recently to find a husband for a colored lady of twenty-four, who had a fortune of 7,500,000f. More than one hundred applications were received in two days from the opposite sex—the ages ranging from seventy to twenty.

☞ One of the peculiarities of the great International Exhibition to be held in Paris next year, will be a grand

restaurant, or rather a series of restaurants, each one to represent the *cuisine* of a different nationality, and in which the waiters are to have the distinct costume of the country represented.

New Machine for Cutting Coal.

In connection with the collieries, a new machine for cutting coal is being made at the Thorncliffe works, under the auspices of Messrs. Beacher and Gillot. It is in every way different from those at present introduced to the public, and, from a casual inspection, it appears likely to supercede most of those in use. It comprises a series of twelve cutters, varying in lenghth from one to three feet, worked by atmospheric pressure, and is capable of cutting a large quantity of coal in a short time, without making much waste. In due time it will be patented, and as a trial will shortly be made, we expect to be able to give more accurate details of its capabilities. In the same establishment a workman, named William Buckley, has taken out—or is about to do so—a patent in improvements in signalling apparatus for cutting and other purposes, which is a great improvement on those at present in use, as it works with great certainty and ease, and is less liable to get out of order. The invention consists in the employment of a metal base-plate, secured to a wall, or other support, having two fixed studs or centre pins, upon the first of which is fitted, to play freely, a grooved pully, round which the signaling chain or cord passes, and whence it descends to the bottom of the mine. A stud or lateral projection on the base of the pulley works in a curved slot in the base-plate, and controls the rotary motion of the pulley. On one side of the periphery of the pulley is a pocket, or recess, which receives a tumbler for elevating the spring-striking hammer of a signal gong, fixed on the same stud that carries the grooved pulley. The second fixed stud or centre-pin, in the base-plate, serves as the fulcrum of the lever which carries the hammer, and upon this stud is fitted, so as to turn freely, a disc, having two apertures on opposite sides, near its circumference. This disc receives a step-by-step rotary movement, by means of a pull in the hammer lever taken into a ratchet wheel on the centre of the disc, so that each time the hammer is elevated by the action of the tumbler against a projecting portion of its lever the disc will be moved through a certain space. Behind this disc, on the surface of the base-plate, there are painted or engraved a series of numbers, so arranged that those numbers only will be visible which coincide with the perforations in the disc. The object of this disc, and the numbers behind it, is to serve as a register by indicating the number of signals given in the absence of the attendant. There are other means by which the object can be attained, and the invention is one which will be, from its simplicity, a great improvement over those now in use, and as such, commends itself to the proprietors and managers of mines.—*Engineer.*

Better than Oil.

As the country grows older and timber becomes scarce, attention has been seriously directed towards a supply of fuel. This has been particularly the case in the northwest, where there are no deposits of coal. It has long been known that there were illimitable deposits of peat, but it has lain unused for the want of practicable machinery with which to prepare it for the purposes of commerce. Many experiments have been made, but none seemed to answer the desired end. Recently, however, a machine has been invented and patented which bids fair to supply the want. A company has been formed and their machines are now being manufactured. The machine is called the Rae Peat Machine. We have seen the machine at work, and seem to us to answer fully the purposes for which it is intended. It granulates perfectly the most fibrous peat, and discharges it in a continuous piece that can be cut into blocks, or any desired length, suitable for drying. The form of the manufactured peat is that of an inverted U, so that it sheds rain perfectly during the drying process. Parties who have peat-beds should examine this machine, for we believe there is more money in one of them on a good bed, in a section requiring fuel, than in the average of flowing oil wells. —*Milwaukee, Wis., paper.*

WHAT IS SAID OF THE "JOURNAL OF MINING" BY THE PRESS.

***From the London Quarterly Journal of Science, July,* 1866.**

By the courtesy of the proprietors we have been favored with copies of the AMERICAN JOURNAL OF MINING, published in New York. This new periodical, embracing Milling, Oil-Boring, Geology, Mineralogy, Metallurgy, etc., has a sufficiently extended field for its labors. Within the United States territory nearly every metalliferous and earthy mineral has been found. The extent of the American coal fields is vast, and roads and railways are rapidly opening out districts from which the supply of fuel can be abundantly obtained. A new industry has been created in the oil regions, and the rapidity with which the iron manufactures of the United States is expanding shows that such a journal as that now before us, if conducted with strict honesty of purpose, must become important equally to the miner, the metallurgist, the manufacturer and the public. The AMERICAN JOURNAL OF MINING evidently takes the *Mining Journal* of this country as the example it would follow. Reports on mines and mining, correspondence on these, on metallurgy, and mineral manufactures, with notices of those sciences which bear upon any of these industries, and a very extensive share list, form the bulk of the papers yet issued. Amongst the original papers those on "Petroleum," by Professor E. Englehardt, promise to be as valuable and instructive as they are interesting. From the "Mining Statistics," by Dr. R. P. Stevens, we abstract the following particulars relative to several branches of mining and metallurgy, etc.

***From the Oregon State Journal, June* 16.**

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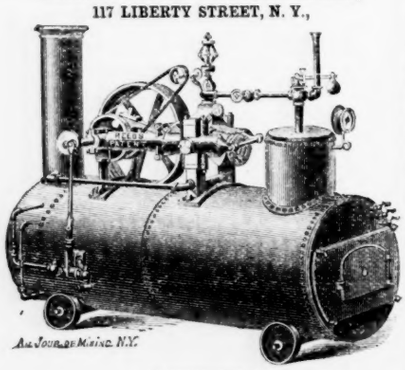

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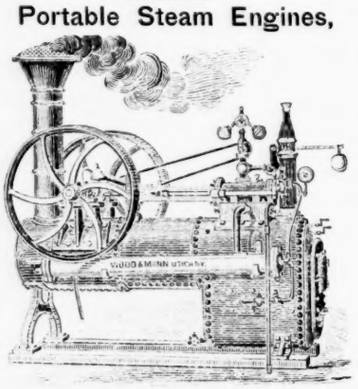

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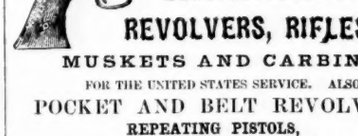

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Very respectfully,
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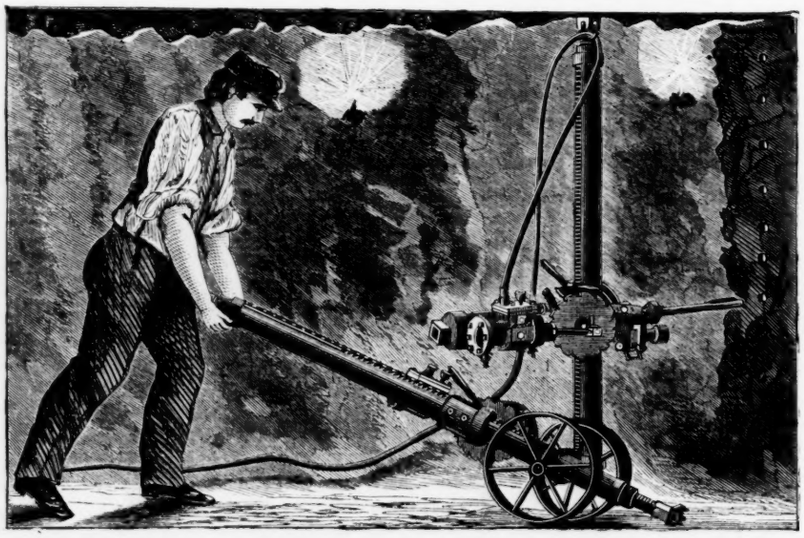

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☞ This cut represents a section of a mining tunnel, or *drift*, 6x4½ feet, with two Drilling Engines; one driven by *compressed air*, drilling horizontal holes, the other being moved by the Engineer to its position on a pair of wheels *temporarily* attached to its supporting column; three of these columns, with two machines on each, may be worked in a drift of this size, producing as much working effect as fully seventy-five men. A drift of this size through solid rock (Granite for example) can be thus driven ten lineal feet every 24 hours. ☜

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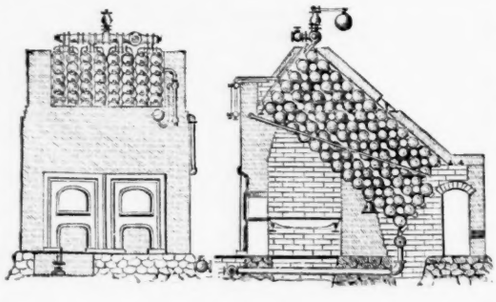

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